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Southeast Alaska Pot Shrimp Fishery Management Plan, 2006

by

Bill Davidson

and

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Alaska Department of Fish and Game **Division of Commercial Fisheries**

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Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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ABSTRACT

The Southeast Alaska pot gear, shrimp fishery will open on October 1, 2006 to harvest spot prawns *Pandalus platyceros* and Coonstripe shrimp *Pandalus hypsinotus*. For this limited entry fishery beginning in October, 2005 there were 292 permits issued and 141 fishermen were active participants. The fishery will be managed by Alaska Department of Fish and Game staff to limit harvest amounts to Guideline Harvest Levels (GHL) in pounds of whole shrimp set for each of 17 separate management areas. The total poundage of shrimp targeted in this fishery during the 2006-07 season will be 853,400 lbs. Historical fishery information and information regarding the status of shrimp populations in the various districts is reviewed. Changes in GHLs from previous seasons is discussed. In 2006-07 GHLs to be changed from prior years include Districts 1 and 14 which are decreased, and District 15 which will remain closed for the season. Details describing management of the fishery and department research programs are presented. In cooperation with the Southeast Alaska Pot Shrimp Task Force a new, voluntary program to obtain size category information directly from catcher-processors on fish tickets will be continued this season in order to increase the information base upon which management decisions can be made.

Key words: Shrimp, spot prawns, coonstripe shrimp, pot gear, *Pandalus platyceros, Pandalus hypsinotus,* Octopus *dofleini,* Octopus *rubescens*, Guideline Harvest Level (GHL), commercial fishery.

INTRODUCTION

The spot prawn *Pandalus platyceros* is the target species for most Southeast Alaska shrimp pot fisheries, with smaller quantities of coonstripe shrimp *Pandalus hypsinotus* also harvested. Both species are harvested from rocky habitats. The greatest portion of the harvest occurs in Districts 1, 2, 3, 6, and 7. Significant harvests occur in District 10 and Section 13-C and other areas.

Harvest records dating from 1962 indicate the pot shrimp fishery began with sporadic effort and low harvest through the mid-1970s when the pot shrimp fishery served as a supplemental source of income. Total Southeast harvest levels in the 1970s averaged 22,000 lbs per year. Through the mid-1980s most of the product was sold over the dock to private individuals, restaurants, or other markets without passing through the traditional system of processors established for other fisheries. Total Southeast harvest levels in the 1980s averaged 250,000 pounds per year. From 1990/1991 through 1994/1995 the character of the fishery underwent radical changes with the number of permits fished as high as 248 and average annual harvest increased to 711,000 pounds. In October 1994, the first floating processor entered the fishery. Pot fishing efficiency and the pace of the fishery greatly increased during this time. From 1996/1997 through the 2005/2006 seasons, with new guideline harvest ranges (GHRs) implemented, the 10-year average annual harvest of spot shrimp has been 923,216 whole pounds of shrimp with a peak harvest of 1,075,341 lbs during the 2003/2004 season (Table 1). Harvests of coonstrip shrimp are much lower than spot shrimp with prior 10-year average harvest of 69,365 whole pounds of shrimp. Districts1, 7, 11, 15, and 16 containing the majority (93%) of the harvest (Table 2). The recent 10-year average harvest of coonstripe shrimp comprises 7% of the average total shrimp harvest of 992,581 lbs region-wide.

In 1995, the Commercial Fisheries Entry Commission received petitions from more than 70 people from Wrangell, Ketchikan, Craig, and the Tenakee Springs Fish and Game Advisory Committee requesting limitations to the number of participants in the Southeast pot shrimp fishery. The commission obtained and analyzed data concerning the fishery and held numerous public hearings throughout Southeast Alaska and announced in early November 1995 that they had adopted a limited entry program. In October 1996, the commission adopted a point system for the fishery and by February of 1998, the commission began the process of issuing permits for the fishery.

There were a total of 292 active P91A permits issued in 2006. Of that total, 141 participated in the fishery.

The commercial pot shrimp fishery opens by regulation on October 1 each year. Management, since the 1995/1996 season, has been, and continues to be, focused on harvesting within GHRs that are established for each separate fishing area (Tables 3, 4). There are nineteen distinct pot shrimp fishing areas in Southeast Alaska: Districts 1 and 2, Section 3-A, Section 3-B/C, Districts 4–11, Tenakee Inlet, the remainder of District 12, Sections 13-C and 13-A/B, and Districts 14-16. Each of these pot shrimp area fisheries are discussed separately in this 2006 Southeast Alaska Pot Shrimp Fishery Management Plan.

CHANGES FOR 2006/2007 POT SHRIMP FISHERY

New Regulations

The Alaska Board of Fisheries met in February, 2006 in Ketchikan and adopted several changes to Chapter 31, the Commercial Shrimp Fishery Regulations which will affect the Southeastern Alaska Commercial Shrimp Pot Fishery.

Regulation 5AAC 31.115. SHRIMP POT GUIDELINE HARVEST RANGES FOR REGISTRATION AREA A. was changed so that the upper end of the Guideline Harvest Ranges (GHR)s were changed in specified Districts, Sections or portions of Districts with unique GHRs. The GHR may be considered as a potential range in which the GHL can be set. The GHL is the management target harvest amount established for a particular season. The upper end of GHRs were increased in some districts or portions of districts where the department had either already increased Guideline Harvest Levels (GHL)s above the upper end of the GHRs or where department area biologists thought there might be some potential of increasing GHLs in the future. In areas where GHLs have been reduced the GHRs were not changed. The lower end of all GHRs remains at 0. GHRs are expressed in pounds of whole shrimp weight of the target shrimp species for each area. GHRs were increased as follows: in District 2 from 86,000 to 120,000 lbs; in Sections 3-B/C from 50,000 to 70,000 lbs; in District 4 from 20,000 to 28,000 lbs; in District 6 from 68,000 to 82,000 lbs; in District 8 from 20,000 to 28,000 lbs; in District 10 from 36,000 to 58,000 lbs; in the Tenakee Inlet portion of District 12 from 20,000 to 34,000 lbs; and in Section 13-C from 30,000 to 50,000 lbs. This regulatory change was made so that when GHLs are established by the department before each season the GHL's will always be within the regulatory GHR for that district or portion of a district. Increasing of GHRs in regulation provided greater flexibility to the department to increase GHRs in areas where shrimp stock status is considered strong and capable of sustaining an increased level of harvest. In areas where stock status is not considered strong enough to sustain the current level of harvest the department can appropriately lower the GHL or close an area prior to each season. When and if there is a need to increase a GHR in the future, the department will first need to submit a proposal for a GHR change to the Alaska Board of Fisheries for approval.

Also in 5AAC 31.115 (b) the Tenakee Inlet area of District 12 subject to a unique GHR is defined.

Regulation 5AAC 31.124 (e). LAWFUL SHRIMP POT GEAR FOR REGISTRATION AREA A. (e)(3) was changed to clarify that "all pots on board a vessel or operated from a vessel must be of the same type and size as defined in (2)(A) or (2)(B) of this subsection." In the subsection (2)(A) refers to a "small pot" up to 124 inches in perimeter and (2)(B) refers to a "large pot" of

more than 124 inches and not more than 153 inches in perimeter. The purpose of this clarification was to ensure fishermen use either all small pots, or all large pots, and not a combination of the two pot size categories. This clarification will result in improved harvest rate data quality for use in managing the fisheries and in evaluating shrimp stock status.

Regulation 5AAC 31.126 SHRIMP POT MARKING REQUIREMENTS FOR REGISTRATION AREA A. was amended to read:

(c) Shrimp pots deployed on a longline, including *more than five* pots, must have at least one bouy attached to each end of the longline. The bouys must be properly marked as specified in 5AAC 31.051 and the pots must be marked as required under (a) of this section.

NOTE: A transcription error adopting this new regulation and published in the *2006-2009 Statewide Commercial Shrimp, Dungeness Crab, and Miscellaneous Shellfish Fishing Regulations* pamphlet was worded "including five or more pots." Measures are currently underway to correct this error, and the final outcome will be published in a News Release prior to the 2006/2007 season.

This regulation was adopted to reduce the incidence of lost shrimp gear and any associated shrimp mortality on productive shrimp fishing grounds.

Regulation 5AAC 31.143 (b) REPORTING REQUIREMENTS FOR SHRIMP CATCHER-PROCESSOR AND CATCHER-SELLER VESSELS IN REGISTRATION AREA A. was repealed and readopted to place shrimp pot catcher-processor reporting requirements formerly provided under delegated ADF&G emergency order authority to be placed into regulation. This will clarify what is required in regulation and the department will no longer need to specify the details of what information must be reported and when by emergency order each season. Catcher-processors must call-in once a week to the ADF&G area office where the shrimp fishing occurs before 12:00 noon Wednesday of each week during normal business hours of 8:00 a.m. to 5:00 p.m., unless other arrangements have been made with a local representative of the department, with the following information: permit holders or callers name; vessel name and ADF&G number; fish ticket numbers of all fish tickets used since the prior call-in; date of landing on each ticket; district and statistical areas on each (daily) fish ticket; the number of pot lifts on each fish ticket; the number of days pots were in the water to harvest (soaked) on each ticket; the weight of spot and coon shrimp on each ticket specifying either whole weight or tail weight; and date of last delivery. Reporting is required in all managed areas this season except for Section 13-C and the Tenakee Inlet portion of District 12. Additional details regarding the implementation of this new regulation are discussed in the section of this report under MANAGEMENT APPROACH.

Regulation 5AAC 31.143(c) REPORTING REQUIREMENTS FOR SHRIMP CATCHER-PROCESSOR AND CATCHER-SELLER VESSELS IN REGISTRATION AREA A. was also repealed and readopted to read:

(c) The fish ticket requirements for commercial shrimp pot and beam trawl vessels in Registration Area A are as follows:

(1) an owner or operator of a shrimp pot catcher-processor vessel shall complete a separate fish ticket for each day fished for each district and each statistical area in which shrimp are harvested and processed on board the vessel; fish tickets must be submitted to the department within seven days of closure of a district or portion of a district for which

a distinct guideline harvest level exists; a shrimp pot catcher processor vessel that has stopped fishing in a district or portion of a district for which a distinct guideline harvest level exists shall contact, by telephone, the local ADF&G area office and report the information specified in this paragraph before fishing in a new district or portion of a [district or] section.

These requirements where formerly were implemented under emergency order authority and now are required by regulation. Catcher-processors should note that there are three major components to new fish ticket reporting requirements:

1) A separate fish ticket must be written for each day fished and for each district or portion of a district with a unique GHL. For example if two separate districts (or portions of a district with a unique GHL) are fished on the same day then two separate fish tickets must be issued for that day. NOTE: The meaning of "Statistical area", underlined in the regulation as cited above, in this case means portion of a district with a unique GHL. A separate fish ticket is not needed for what are commonly referred to as statistical areas, eg. 112-41 (the eastern portion of Tenakee Inlet) since there is no GHL that is unique to this small area.

2) Fish tickets must be submitted to the department within seven days after the closure of a district or portion of a district with a unique GHL. With this regulation in place in the pot shrimp fishery, the statewide requirement that all fish tickets must be turned in "within 7 days after landing, or as otherwise specified by the department for each particular area and fishery (5AAC 39.130(c)) will not be in effect." The department strongly relies on actual fish ticket information to manage the fishery.

3) When catcher-processors stop fishing in a district or portion of a district with a unique GHL, even if that area has not been closed, they must first contact the local ADF&G office by telephone before fishing in a new district or section with a unique GHL. The department must project effort to close fishery areas without exceeding GHLs, but simply can not accurately project closures without knowing real time effort levels.

Regulation 5AAC 31.143(e)(2) REPORTING REQUIREMENTS FOR SHRIMP CATCHER-PROCESSOR AND CATCHER-SELLER VESSELS IN REGISTRATION AREA A. was amended to re-define a "catcher-seller" vessel as "a vessel from which shrimp are caught if there is any attempt to sell unprocessed shrimp taken by the vessel to a person not licensed to process shrimp."

Regulation 5AAC 31.128. OPERATION OF OTHER GEAR IN REGISTRATION AREA A. was modified so that vessel owners or operators may no longer register for both the commercial pot shrimp and the commercial beam trawl shrimp fisheries at the same time.

New Fish Tickets

Last season, a new statewide shrimp fish ticket was issued with a space provided in the heading to record the number of pot lifts. The Alaska Department of Fish and Game (ADF&G) is again requiring that catcher-processors and direct marketers record the "Number of Pot Lifts" in the new heading box and also the number of "Days Fished (Gear in Water)," and not record this information in the effort column in the body of the ticket. This change was necessary for an accurate calculation of catch per unit effort (CPUE) by the department. CPUE in turn can be used to help determine the status of shrimp populations and fishing effects over time. Where fish

tickets may be issued less frequently (for those who are not catcher processors or direct marketers) old series fish tickets may continue to be used.

Changes of Guideline Harvest Levels for specific areas

Changes in the guideline harvest levels (GHLs) will occur for District 1, District 14, and District 15. Changes to harvest levels were determined based on several key indicators taken from both fishery-dependent and fishery-independent data sources.

Key indicators that were considered included:

1. Trends in overall commercial catch rate among fishing seasons;
2. Daily commercial catch rate (catch per pot lift) within season;
3. Achievement of GHL and trends in season length;
4. Trends in effort levels;
5. Average carapace length (CL), and proportion of shrimp over 36mm CL, relative to prior years from survey data/dockside sampling/on-grounds sampling;
6. L50 from survey data (length that 50% of shrimp are female); and
7. Spatial distribution of commercial catch.

For most key indicators, minimum increments were established as guidelines for defining trends. For example, in general, a trend existed where a consistent increase or decrease was observed for 3 or more years. After key indicators were evaluated for each District or Section, a stock status determination was made, which resulted in recommendations to increase, decrease or maintain harvest levels. In order to create meaningful, but not excessive changes, modifications to harvest levels were limited to a range of 20%-40% of the current level, for either increases or decreases.

As a general practice the department will maintain modified GHLs for a minimum of three seasons so that fishery and stock trends in response to these changes can be fully understood before additional manipulations occur. Between seasons, however, the department will continue to monitor stock status trends for each area. In cases where there is compelling evidence that GHLs should be changed or areas should be temporarily closed, the department will take such actions irrespective of the "three year rule."

District 1:

The GHL of 164,000 lbs of spot shrimp will be reduced by 40% to 98,400 lbs for the 2006-2007 season. The primary basis for this reduction is that the catch rate has been decreasing for the past two years driving a large increase in season length for the current and previous season. The average season length for 2000-01 through 2003-04 seasons was 48 days. In contrast, the 2005-2006 harvest of 161,000 lbs was attained after a season of 75 days. A pre-season survey does not exist for this area, which may have provided an early warning of the coming decline. Nor was sampling data collected from this district in 2005. Sampling from previous years indicates a decline in the L50—the size at which female shrimp transition to males.

District 14:

For 2006-2007 the GHR will be decreased by 25% to 15,000 pounds of spot shrimp. The stock appears to be declining. The 2004-2005 harvest was 15,845 pounds of spot shrimp from a GHR of 0-20,000 pounds.

1. The catch per pot lift decreases throughout the fishery.
2. The season length has been increasing, with decreased effort.
3. Dockside sampling indicates decreasing carapace and L50 lengths.
4. Historically, the bulk of the harvest has come from only the eastern third of the district.

District 15:

District 15 will be closed for the 2006–2007 season. Catch rates in core areas remain well below average. Recent trends include decreasing effort and increasing season length with the majority of the harvest taken from a single sub-district. The 2005–2006 District 15 harvest was 4,230 lbs of coonstripe shrimp and the district closed for the season on February 28, 2006. There are no positive trends in this fishery. Reduced catch rates (catch/pot/lift), decreasing mean carapace length from limited dock side samples and reports of serial depletion in areas of historical high abundance are indicative of poor stock status. Prior management actions have included closing core fishing areas in previous spring fisheries, and a reduction in the GHL during the 2005–2006 season. The department intends to keep the district closed at least through the 2006–2007 season to help rebuild this stock. The department's decision to close District 15 was based on:

1. Declining trends in mean carapace length from limited dockside sampling.
2. Increased season length and failure to harvest the GHL in the past 3 seasons.
3. Recent years' harvest is from areas other than historical core fishing zones.
4. Fish ticket data indicates overall declining catch per pot and fisherman reports indicate serial depletion in areas of historical high abundance.
5. No pre-season assessment surveys are done in this district, and little dockside sampling exists.

Voluntary Catcher-Processor Logbook Program

Working cooperatively with the Southeast Alaska Pot Shrimp Task Force, in the 2005/2006 season ADF&G implemented a voluntary logbook pilot program with catcher-processors. The purpose of the program is to determine if size specific information on catch rates by fishing area can be collected that would enhance the department's ability to use commercial fishery data for monitoring stock status. All catcher-processors who are interested in participating in this program are encouraged to participate. ADF&G is asking participants to specify the gram-weight categories and numbers of shrimp for each size category for their specific market at the time of registration. When filling out fish tickets, either the daily tally of the number of boxes by size category, or the daily poundage by category, should be recorded in addition to other information required on fish tickets. This additional fish ticket information can then be converted to shrimp size distribution specific to areas and times harvested. This information may be useful to ADF&G when evaluating trends stock status and in setting appropriate GHLs to better manage the shrimp fishery. Such information may be especially important for areas where there is inadequate sampling data currently available.

Letters explaining this program were mailed out to all licensed catcher-processors and direct marketers on September 2, 2006. Included with the letters were registration forms, and examples

of how fish tickets should be filled out with shrimp size information. These materials are included as **Appendices B–F** of this plan, and will also be available at the time of registration.

During the 2005–2006 season, during the first year of this new program, 30% of all pot shrimp catcher-processors (31 out of 70 permits) participated. 512 fish tickets were filled out and entered. This good response gave the department the opportunity to begin collecting this new data and to experiment with initial data analysis. Despite this success, data from many areas cannot be used due to insufficient numbers of responses, short duration of fisheries, and confidentiality issues in many districts. In cooperation with the pot shrimp task force, the department is again soliciting participation from as many catcher-processors as possible.

MANAGEMENT APPROACH

Management is based upon closed seasons to prevent fishing on major stocks during the egg hatch or growth and recruitment periods. Management tools also include restricting minimum mesh size, intended to capture and retain the larger size segment of the stock. Pot sizes are standardized to two sizes, with a maximum number of pots per vessel. Daily deployment and hauling times are restricted (8:00 a.m. to 4:00 p.m.) and a guideline harvest range (GHR) is set for each fishing district. Regulations have also been adopted for the permitting of shrimp floating processors, and reporting requirements are established for shrimp catcher-processors and for catcher-seller vessels.

The major problem ADF&G has faced in the last several years is the inability to accurately track catches from catcher-processors. The introduction of the catcher-processor vessel into the fishery is relatively new. During the early to mid-1990s, catcher-processors made up less than 20% of the fishing fleet. In more recent years, 50 to 70% of the fishing vessels in some districts are catcher-processors. The department, with the approval of the Alaska Board of Fisheries (BOF), has established reporting requirements for catcher-processors. Those requirements can be found in 5 AAC 31.143: *Reporting Requirements For Shrimp Catcher-Processor Vessels in Registration Area A.*

A catcher-processor vessel is a vessel that catches and processes product on board [5 AAC 31.143.(d)]. Observers are not required on catcher-processors. A catcher processor cannot buy or process shrimp from another fishing vessel or tender. The catcher-processor owner or operator shall complete separate fish tickets every day that shrimp are caught and processed on board the vessel for each district or portion of a district with a unique GHL. The statewide requirement that all fish tickets be turned in seven days after landing will be waived for this fishery since new regulations are in place specific to the Southeastern Alaska pot shrimp fishery. However, fish tickets must be submitted to an Alaska Department of Fish and Game office within seven days of the closure of a District or Section with a unique GHL if a shrimp catcher-processor fished in the area. If a catcher-processor stops fishing in an area with a unique GHL then the department must be contacted by telephone prior to fishing in another area with a unique GHL.

Catcher-processors must call and report specified information to the ADF&G area office managing the fishery between 8:00 a.m. and 5:00 p.m. Monday or Tuesday or by 12:00 noon Wednesday each week of every week fishing operations are conducted. For the 2006/2007 season, reporting requirements will start the week of October 2 in each district, section or portion of a district with a unique GHR. Catcher-processors are advised that they should contact the office responsible for each area:

- Ketchikan for Districts 1–4;
- Petersburg or Wrangell for Districts 5–10;
- Sitka for District 13;
- Juneau for District 11, 12, 14, and 16; and
- Haines for District 15.

Due to the rapid pace of the fishery, call-in requirements are being waived for the Tenakee Inlet portion of District 12 and in Section 13-C.

The once per week reporting requirements allow shrimpers 2 ½ days at the start of each week to contact the local area office. For example, operators of catcher-processors fishing in District 10 will initially have to phone in the information listed below sometime between Monday, October 3 and noon, Wednesday, October 5 and each subsequent week thereafter.

Reporting requirements for catcher-processors are now in accordance with 5 AAC 31.143 (b) and (c).

1. Callers name or permit holder name;
2. Vessel name and ADF&G number;
3. Fish ticket number of all fish tickets used since last call in;
4. Date of landing on each fish ticket;
5. District and subdistrict on each daily fish ticket;
6. Numbers of pot lifts on each fish ticket;
7. Number of days pots were in the water to harvest shrimp on each ticket;
8. Weight of spot shrimp and coon shrimp on each ticket – specify whole or tail weight; and
9. Date of last delivery.

Alaska Department of Fish and Game will furnish catcher-processors with pre-printed reporting forms to help facilitate the reporting requirements. Forms may be picked up at any Fish and Game office in Southeast Alaska. A copy of the reporting form is provided as Appendix A.

ADF&G will issue weekly news releases, usually on Thursday afternoons, which will update shrimpers on the progression of the fishery, by specific areas managed. A news release will list the GHL for districts and the harvest to date for the individual district. In addition to the weekly summary news releases, the department will issue other news releases as required to announce fishery closures or other important information regarding the fishery.

Catcher-sellers are defined as vessels from which shrimp are caught if there is any attempt to sell unprocessed shrimp taken by the vessel to a person not licensed to process shrimp. Catcher-sellers are reminded that regulations require that an ADF&G shrimp fish ticket indicating the weight of the shrimp on board by species before any shrimp are removed from the vessel.

POT SHRIMP TASK FORCE

In January 2003, the Alaska Board of Fisheries approved a plan that formalized the Southeast Alaska Pot Shrimp Task Force, with designated seats similar to the king and tanner crab and

Dungeness crab task forces. Previous task force meetings have been held on a relatively informal basis in communities where significant numbers of pot shrimp fishermen live and where jet service occurs. The task force concept is designed to obtain input from the industry and improve communications between the fleet and the department.

The third formal Southeast Alaska Pot Shrimp Task Force meeting was held in Ketchikan on February 21, 2006. A detailed meeting summary will be available prior to the next Task Force meeting with Alaska Department of Fish and Game. That meeting will be scheduled following the major period of harvest during 2006–2007 season.

OTHER ISSUES RELATED TO THE FISHERY

OCTOPUS BYCATCH

Marine invertebrates, including octopus, may be taken only under the authority of a permit issued by the commissioner or the commissioner's designee [5 AAC 38.062]. Shrimpers are advised that this applies to octopus they wish to retain for their own use [5 AAC 02.021].

Alaska Department of Fish and Game will issue permits under authority of 5 AAC 38.062 to allow retention of octopus captured as bycatch in commercial pot shrimp fisheries. Permits are available at Southeast Alaska area offices. Permit stipulations include a maximum octopus bycatch limit of 5% whole weight of total shrimp onboard a vessel, dates for which the permits are valid and other stipulations.

Shrimpers are advised that by issuing these permits the Alaska Department of Fish and Game is not committing to doing so in the future. Should the level of interest and subsequent harvests exceed levels considered potentially detrimental to the resource, the department may consider invoking the High Impact Emerging Fisheries regulation [5 AAC 39.210] and close the fishery until an interim management plan can be developed and presented to the Alaska Board of Fisheries.

ADF&G is interested in obtaining as much biological information as possible from octopus retained in the commercial pot shrimp fishery. In addition to weight and numbers of individual octopus harvested in the fishery the department would like to obtain species composition, sex, and harvest distribution data. There are two species of octopus in Southeast Alaska, the giant Pacific octopus (*Octopus dofleini*) and the red octopus (*Octopus rubescens*). Male octopus have a modified third arm which is called the hectocotylus. The hectocotylus has a deep groove between the two rows of suckers. Shrimpers are advised that ADF&G staff may ask to sample octopus on an opportunistic basis during on-the-grounds sampling trips.

POT SHRIMP FISHING OFFSHORE

ADF&G has received several requests to initiate pot shrimp fisheries offshore (outside State waters, three miles or greater from shore). In various public meetings and individual telephone calls, department staff has agreed to consider these requests. After further investigation, it has become apparent that offshore commercial pot shrimp fisheries can be accommodated under existing regulations and guideline harvest levels. Given the absence of a Federal Fishery Management Plan for commercial pot shrimp fisheries in Federal waters the State of Alaska has management jurisdiction for this fishery [Magnusen Stevens Act SEC 306.104–297 (3)]. As these offshore waters are part of Registration Area A, Southeast Alaska, they are subject to

limited entry. Shrimpers who wish to fish in these areas must have a Southeast Alaska commercial pot shrimp fishery card.

Offshore waters are included in Districts 4, 13, and 16, the boundary lines of which are described in 5 AAC 31.105 (d), (m), and (p). The offshore area includes the Exclusive Economic Zone (EEZ) of the United States. The EEZ extends to a distance of 200 nautical miles offshore of the defined fish districts (President Proclamation 5030). Shrimpers who wish to fish in outside waters may do so only if those districts are open. Shrimp harvested in these areas will be part of existing guideline harvest levels for those districts.

EXPLORATORY TEST FISHERIES

With inclement fall weather and shortened seasons, the commercial pot shrimp fishery effort has been focused in more protected waters that have been traditionally productive. This has resulted in some areas of Southeast Alaska receiving little or no commercial fishing pressure. In the winter of 2006, the Pot Shrimp Task Force requested that the department allow exploratory test fisheries to evaluate shrimp stocks in areas with little or no history of exploitation. Specifically the task force identified two areas to consider for exploratory fisheries including the offshore areas of District 13, and portions of District 9 including the west coastline of Kuiu Island and grounds north of Coronation Island.

On March 13, 2006 the department announced two separate Requests for Quotation (RFQ); one for District 9 and one for District 13. Only one CFEC pot shrimp permit holder would be allowed to fish in each area. The RFQ format was based on the highest net price per pound paid to the department for the shrimp caught and sold during the test fishery with other proceeds from the test fishery used to reimburse the fishermen for costs. Test fishing would be allowed for a maximum of ten consecutive days anytime during the period May 15–June15. Other requirements included maintaining a detailed logbook and providing the department with 25 pounds of whole shrimp for biological sampling. The area of District 9 opened to test fishing included waters of Section 9-A south of the latitude of Point Howard and Section 9-B south of the latitude of Kingsmill Point Light. In District 13, the offshore waters south of the latitude of Point Woodhouse on Biorka Island were opened for test fishing.

Only one bid was received for each area. Ultimately, 32 sets were made in District 9 in the areas of Tebenkof Bay and Port Malmesbury. In District 13, 11 sets of 8 pots each were made in the area west of West Crawfish Inlet. Essentially no shrimp were caught in either test fishing effort. The department will continue to consult with the Pot Shrimp Task Force in determining whether to continue exploratory test fisheries in the future.

KETCHIKAN AREA FISHERIES

INTRODUCTION

The Ketchikan fishery management area encompasses Districts 1, 2, 3, and 4. Pot shrimp fishery management is based on spot shrimp with a small bycatch of coonstripe shrimp. District 3 is divided into two management areas, Section 3-A, and Sections 3-B and 3-C which are managed together. Section 3-A is the largest producer of spot prawns in the region, followed by District 1. District 2 is the fourth largest producer in Southeast Alaska, while harvests in District 4 are very limited.

Prior to the 1983/1984 season, the season length for the pot shrimp fishery in Districts 1, 2, 3, and 4 was restricted by Alaska Board of Fisheries (BOF) action to September 1 through April 30. This was an allocation for shrimp fishers who traditionally used these districts as a supplemental income source during the fall and winter months. The closure during the summer also provided an important biological benefit of allowing stock recruitment to occur through the molting and growing process. For the 1986/1987 through the 1994/1995 seasons, the spot shrimp fishery opening dates in these districts was changed to October 1 through February 28. This change was made for a combination of an egg hatch closure, to allow for summer growth and as an allocation for a fall/winter fishery.

Beginning in the late 1980s and continuing into the early 1990s, the character of the pot shrimp fishery underwent radical changes. Effort levels greatly increased, and harvests changed from less than 50,000 lbs of whole shrimp per season to harvests exceeding 150,000 lbs in District 1, 30,000 lbs to 80,000 lbs in District 2, and 40,000 lbs to well over 200,000 lbs in District 3. The introduction of floating processors and catcher-processors in the pot shrimp fishery also greatly accelerated the growth of the fishery.

DISTRICT 1

District 1 includes:

> All waters east and north of a line from the southernmost tip of Caamano Point to 54°40' N. latitude, 131°45' W. longitude, and waters north of a line running from 54°40' N. latitude, 131°45' W. longitude to 54°42.48' N. latitude, 130°36.92' W. longitude (5 AAC 31.100).

In 2000 the Alaska Board of Fisheries closed to commercial shrimp fishing in the following area of District 1:

> Those waters east of a line from Indian Point at 55°36.85' N. latitude, 131°42.02' W. longitude, to the northeasternmost tip of Betton Island at 55°31.95' N. latitude, 131°46.37' W. longitude, to the southeasternmost tip of Betton Island at 55°29.90' N. latitude, 131°48.18' W. longitude, to Survey Point at 55°28.07' N. latitude, 131°49.87' W. longitude (Figure 2, 5 AAC 31.136).

The GHR system imposed on District 1 during the 1995/1996 season set a GHR range of 0 to 145,000, which in 2000 was modified to be 0 to 164,000 lbs of whole spot shrimp. With the implementation of this GHR the length of the District 1 season has been reduced from approximately 150 days prior to the 1995/1996 season to as few as 37 days in the 1996/1997 season. The average seasonal harvest since the 1995/1996 season has been 160,000 lbs of whole spot shrimp with an average of 47 vessels participating in the fishery.

For the 2006/2007 season District 1 will be managed for a GHL of 98,400 pounds of whole spot shrimp. This is a 40% reduction of the GHL from previous years. The primary basis for this reduction is that the catch rate has been decreasing for the past two years driving a large increase in season length for the current and previous season. The average season length for 2000–01 through 2003–04 seasons was 48 days. In contrast, the 2005–2006 harvest of 161,000 lbs was attained after a season of 75 days. A pre-season survey does not exist for this area, which may have provided an early warning of this decline. No sampling data was collected from this district in 2005, but sampling from previous years indicates a decline in the L50—the size at which female shrimp transition to males.

The Alaska Department of Fish and Game anticipates the pace of the pot shrimp fishery will be similar to the past three seasons, when the fishery averaged 67 days. The district was open for 75 days during the 2005/2006 season harvesting 161,000 pounds of whole spot shrimp. With the reduced quota the fishery is expected to last approximately 40 days.

DISTRICT 2

District 2 includes:

> All waters south of a line running from the easternmost tip of Narrow Point to the northernmost tip of Lemesurier Point, waters west of a line running from Caamano Point to 54°40' N. latitude, 131°45' W. longitude, and waters east of a line running from Point Marsh Light to 54°40' N. latitude, 132°17.50' W. longitude (5 AAC 31.105).

In 2000 the Alaska Board of Fisheries closed to commercial shrimp fishing in District 2 in the following area:

> Those waters of Twelve-mile Arm west of a line from Prince of Wales Island at 55°29.07' N. latitude, 132°37.60' W. longitude, to the northeasternmost tip of Loy Island at 55°29.07' N. latitude, 132°36.70' W. longitude, to the easternmost tip of Cat Island at 55°27.80' N. latitude, 132°39.08' W. longitude, to Prince of Wales Island at 55°27.80' N. latitude, 132°40.93' W. longitude, including the waters nearest Hollis Anchorage (Figure 2, 5 AAC 31.136).

The GHR system imposed on District 2 during the 1995/1996 season set a GHR range of 0 to 65,000, which in 2000 was modified to be 0 to 86,000 lbs of whole spot shrimp. With the implementation of this GHR the length of the District 2 season has been reduced from approximately 150 days prior to the 1995/1996 season to as few as 14 days in the 2004/2005 and 2005/2006 seasons. The average seasonal harvest since the 1995/1996 season has been 91,000 lbs of whole spot shrimp with an average of 23 vessels participating in the fishery.

For the 2006/2007 season District 2 will be managed for a GHL of 86,000 pounds of whole spot shrimp.

The Alaska Department of Fish and Game anticipates the pace of the pot shrimp fishery will be similar to the past three seasons, when the fishery averaged 17 days. The district was open for 14 days during the 2005/2006 season harvesting 83,000 pounds of whole spot shrimp. This fishery is expected to last approximately 14 days.

DISTRICT 3

District 3 is divided into three sections. Section 3-A is managed for a GHR of 0 to 260,000 whole lbs, and Sections 3-B and 3-C are managed together for a combined GHR of 0 to 50,000 whole lbs.

In the 1995/1996 season a GHR was set for District 3 of 0 to 200,000 lbs of whole shrimp. In 2000, the Board of Fisheries adopted a separate GHR for Section 3-A of 0 to 264,000 lbs of whole shrimp. The remainder of District 3, Sections 3-B and 3-C were made into one management area with a combined GHR of 50,000 lbs of whole shrimp.

SECTION 3-A

Section 3-A includes:

Those waters District 3 south of 55°15' N. latitude, excluding the waters of Meares Passage.

Since the start of the GHR the length of the District 3 season has been reduced from approximately 150 days prior to the GHR to as few as 9 days in the 1997/1998. Average seasonal harvest and effort levels have been approximately 240,000 lbs of whole shrimp and 50 vessels since the 1995/1996 season.

For the 2006/2007 season Section 3-A will be managed for a GHL of 198,000 pounds of spot shrimp. In the 2004/2005 season this GHL was reduced by 25% over previous years due to a consistent decrease in the average shrimp survey size and the fishery catch rate. While the catch rate in Section 3-A for the 2004/2005 and 2005/2006 seasons were up compared to historical averages, the surveys indicate that shrimp size remains well below average.

The pace of the Section 3-A pot shrimp fishery has increased over the past few years. In 2003/2004 the season lasted 47 days, in 2004/2005 the season lasted 21 days, and in 2005/2006 the season lasted 15 days. The 2005/2006 harvest was 202,000 pounds of whole spot shrimp. It is expected that this fishery will last approximately 14 days.

SECTIONS 3-B AND 3-C

Sections 3-B and 3-C include:

Those waters of District 3 north of 55°15' N. latitude and south of Aneskett Point located at 56°08.83' N. latitude and east of a line from Point Arboleda to the northeasternmost tip of Point San Roque to the southwesternmost tip of Cape Ulitka to the northeasternmost tip of Cape Lynch to the southwest entrance point of Halibut Harbor located on Kosciusko Island.

For the 2006/2007 season Sections 3-B and 3-C will be managed to harvest a total GHL of 50,000 pounds of spot shrimp. This GHL is for both sections. The department will manage the sections as one area and not attempt to split GHL evenly between the two areas.

Sections 3-B and 3-C were open for 15 days during the 2003/2004 and 2004/2005 seasons. These sections were open for two 19-day fishing periods during the 2005/2006 season harvesting a total of 56,000 pounds of whole spot shrimp. It is expected that this fishery will last approximately 24 days.

DISTRICT 4

District 4 includes:

Those waters north of Cape Muzon, west of District 3, and south of a line from Helm Point on Coronation Island to Cape Lynch, including offshore waters. The offshore area of District 4 includes the waters of the EEZ.

The District 4 fishery has only harvested the GHL of 20,000 lbs in 5 of the past 11 years. The average annual harvest in the district since the 1995/1996 season has been 17,000 whole pounds.

For the 2006/2007 season District 4 will continue to be managed to harvest a total GHL of 20,000 pounds of spot shrimp.

PETERSBURG-WRANGELL AREA FISHERIES

INTRODUCTION

The Petersburg-Wrangell fishery management area encompasses Districts 5, 6, 7, 8, 9-B, and 10. District 9 is managed with a single GHR and encompasses waters within both the Petersburg (Section 9-B) and the Sitka (Section 9-A) management areas. With significant harvests occurring in both management areas, responsibility for managing the District 9 fishery has been shared between the Petersburg and Sitka area offices. The District 9 fishery will be managed out of the Petersburg office during the 2006/2007 season. Historically, Districts 7, 6, and 10 have been the third, fifth, and seventh largest producers of spot shrimp in the region, respectively. Districts 5, 8, and 9 produce smaller amounts of spot shrimp. District 8 has small but at times significant landings of coonstripe shrimp. District 7 is usually the largest producer of coonstripe shrimp in the region. Between 15 and 30% of the District 7 harvest has been comprised of coonstripe shrimp.

DISTRICT 5

District 5 includes the waters of Sumner Strait west of Point Baker. Fishing primarily takes place in the bays along the Kuiu Island shoreline and southern Rocky Pass. Prior to statehood and through the 1981/1982 season there were no season or quota restrictions in District 5. During the 1982/1983 season the fishery had the first egg hatch closure occurring in May and June. An egg hatch closure occurred in March and April during the 1984/1985 season. Closures occurred on March 13 during the 1995/1996 season and on December 27 in the 1996/1997 season. During the 1997/1998 season the fishery was open for 12 months with no egg hatch closure. For the 1998/1999 season the fishery was opened from October 1 through February 28 with a summer season from May 1 through August 31. Starting with the 1999/2000 season the fishery has had a winter season from October 1 through February 28 and the summer season was shortened to May 15 through July 31.

The first GHR was established in District 5 starting with the 1995/1996 season. Districts such as District 5 where no strong fishery had developed were assigned a GHR of 0 to 20,000 pounds.

The District 5 fishery has had consistent but usually fairly low effort since the GHR was established. The upper end of the GHR has only been taken during the 1995/1996, 1996/1997, 2002/2003, 2004/2005, and 2005/2006 seasons. The average harvest of spot shrimp since the GHR was established is 16,100 pounds and the effort level has varied between 5 and 13 boats. Catches are usually dominated by catcher-processors. In the 2005/2006 season, catcher-processors landed 100% of the catch and 100% of the catch was landed as whole shrimp. The average coonstripe harvest in the fishery since establishment of the GHR is approximately 250 pounds.

The 2005/2006 season closed by regulation on February 28 after 4 vessels harvested 19,282 pounds of spot shrimp. The fishery did not reopen for the summer season as only a small amount of the upper end of the guideline range remained un-harvested. The total harvest of 19,282 pounds was the second largest harvest since the 1996/1997 season.

TheDistrict 5 GHL will remain at 20,000 pounds of spot shrimp for the 2006/2007 season.

It is anticipated that District 5 will close on February 28, 2006. Because of the very low effort, extensive season, and lack of spatial distribution of harvest within the district the strength of the stock is uncertain.

DISTRICT 6

District 6 includes the waters of Sumner Strait east of Point Baker and west of Low Point and the waters of Clarence Strait north of Narrow Point to Lemesurier Point and Stikine Strait south of Round Point. Fishing primarily occurs in the northern waters of Clarence Strait. Prior to statehood, season restrictions occasionally corresponded to the beam trawl fishery season with the pot fishery opening in mid-April or early-May and closing between late-January and late-February. The first two decades following statehood there were no season or quota restrictions in District 6. During the 1982/1983 season the fishery had the first egg hatch closure, which occurred in May and June. During the 1984/1985 season the egg hatch closure occurred during March and April and it remained that way until it was expanded through May 14 starting in the 1999/2000 season. The first closure to reduce harvest occurred on June 13 during the 1994/1995 season. Since then closures have occurred prior to March 1 each season.

The first GHR was established for the 1984/1985 season when District 6 together with Districts 4, 5, and 8 had a combined GHR of 0 to 55,000 pounds. From the 1985/1986 season through the 1996/1997 season it was changed to a combined GHR of 75,000–100,000 pounds for District 6 and District 8. Beginning with the 1997/1998 season, two separate GHRs were established for Districts 6 and 8 using the baseline historic harvests from the 1990/1991 through 1994/1995 seasons. The District 6 GHR was set at 0 to 65,000 pounds of shrimp. This was modified to 0 to 68,000 pounds of spot shrimp when ADF&G revised the tail weight to whole weight ratio of 1.67 to 2.0 for the 2000/2001 season. The catch of coonstripe shrimp was no longer included in the GHR starting in the 2000/2001 season. The effect of removing that catch was to raise the GHR by about another 2,000 pounds. The average harvest of spot shrimp since the start of the 1995/1996 season is 71,500 pounds. The average harvest of coonstripe shrimp during that same period is 1,400 pounds. Effort in the district has been between 11 and 23 boats fishing since the 1995/1996 season. The season length has varied between 21 and 137 days during that period. Harvests have been dominated by catcher-processors the past seven seasons. In the 2005/2006 season, catcher-processors landed 99% of the harvest and 99% of the catch was landed as whole shrimp.

During the 2005/2006 season, the fishery closed on December 16. The GHR was increased to 82,000 pounds of spot shrimp for the 2005/2006 season, but the season length was not indicative of poor catch rates. Severe weather, combined with a tragedy in the pot shrimp fishery, were the likely causes for the extended season. Seventeen shrimp fishermen harvested 81,955 pounds of spot shrimp and 441 pounds of coonstripe shrimp.

The District 6 GHL will remain at 82,000 pounds of spot shrimp for the 2006/2007 season.

Spatial distribution of the harvest is very limited with over 80% of the shrimp coming from only one sub-district each of the past six seasons. While no survey is conducted in this district, there is a good time series of dockside and on the grounds sampling data. This data shows declines in average shrimp length since 2004.

The catch per pot data along with interviews of fishermen during the management cruise suggest good catch rates in the first couple weeks of the season. The confounding circumstances during

the 2005–2006 season do not help to give a clear indication of stock status. It is expected that the additional 14,000 lbs added to the guideline harvest level in 2005/2006 will lengthen the season 4 to 5 days and it will close on about October 25.

DISTRICT 7

District 7 includes the waters of Ernest Sound, Bradfield Canal, southern Zimovia Strait, Eastern Passage, and Blake Channel. Fishing is concentrated in Ernest Sound. Prior to statehood and through the 1981/1982 season there were no season or quota restrictions in District 7. During the 1982/1983 season the fishery had the first egg hatch closure, which occurred in May and June. During the 1984/1985 season the egg hatch closure occurred during March and April and it remained that way until it was expanded through May 14 for the 1999/2000 season. The first closure to reduce harvest occurred on June 30 during the 1984/1985 season. For the next 10 seasons, District 7 was closed from March through September. Since then closures have occurred prior to March 1 each season.

The first GHR was established for the 1984/1985 season when District 7 together with Districts 1, 2 and 3 had a combined GHR of 0 to 125,000 pounds. The first separate GHR for District 7 of 0 to 100,000 pounds of shrimp was set starting with the 1995/1996 season using the baseline harvest from the 1990/1991 season through the 1994/1995 season. This was modified to 0 to 104,000 pounds of spot shrimp when the department revised the tail weight to whole weight ratio of 1.67 to 2.0 for the 2000/2001 season. The catch of coonstripe shrimp was no longer included in the GHR starting in the 2000/2001 season. The effect of removing that catch was to raise the GHR by between 11,000 and 25,000 lbs. The average harvest of spot shrimp since the start of the 1995/1996 season is 91,600 lbs. The average harvest of coonstripe shrimp during that same period is 20,500 lbs. Effort in the district has varied between 14 and 44 boats fishing during that same period. The season length has varied between 20 and 113 days. Catches during the past six seasons were dominated by catcher-processors. In the 2005/2006 season, catcher-processors landed 94% of the spot shrimp catch and 90% of the catch was landed as whole shrimp. During the 2005/2006 season, the closure occurred on October 30. A total of 79,927 lbs of spot shrimp and 7,983 lbs of coonstripe shrimp were harvested.

The District 7 GHL will remain at 78,000 lbs of spot shrimp for the 2006/2007 season.

A survey is conducted in this district and there is substantial dockside and on the grounds sampling data. These results show general declines in average shrimp length, although this trend does not hold throughout all sub-districts. The daily catch per pot was well above average last season, and was second only to the 1996–1997 season in overall average daily catch per pot in the last ten seasons. The season is expected to close on about November 1.

DISTRICT 8

District 8 includes the waters of the eastern portion of Frederick Sound on the north side of the Stikine Flats and Chichagof Pass and the northern portions of Stikine and Zimovia Straits on the south side of the Stikine Flats. Fishing primarily occurs in those waters within about 10 miles of Wrangell. Prior to statehood, season restrictions occasionally corresponded to the beam trawl fishery season with the fishery opening in mid-April or early-May and closing between late-January and late-February. The first two decades following statehood there were no season or quota restrictions in District 8. During the 1982/1983 season the fishery had the first egg hatch closure, which occurred in May and June. During the 1984/1985 season the egg hatch closure

occurred during March and April and it remained that way until it was expanded through May 14 for the 1999/2000 season.

The first closure to reduce harvest occurred on November 13 during the 1995/1996 season. Since then closures have occurred prior to March 1 each season. The first GHR was established for the 1984/1985 season when District 8 together with Districts 4, 5, and 6 had a combined GHR of 0 to 55,000 lbs. From the 1985/1986 season through the 1996/1997 season it was changed to a combined GHR of 75,000–100,000 lbs for District 6 and District 8. When these two districts were assigned separate GHRs for the 1997/1998 season the GHR was set using the baseline harvest from the 1990/1991 season through the 1994/1995 season. The District GHR was set at 0 to 20,000 lbs of shrimp. This was no change in the GHR when ADF&G revised the tail weight to whole weight ratio of 1.67 to 2.0 for the 2000/2001 season because shrimp landed from District 8 were almost all landed in the round. The catch of coonstripe shrimp was no longer included in the GHR starting in the 2000/2001 season. The effect of removing that catch was to raise the GHR by about another 2,000–3,000 lbs. The average harvest of spot shrimp since the start of the 1995/1996 season is 19,100 lbs. The average harvest of coonstripe shrimp during that same period is 2,500 lbs. Effort in the district has varied between 6 and 20 boats fishing during that same period. The season has lasted between 18 and 37 days since the 1995/1996 season. Day boats land the majority of the catches as whole shrimp. In the 2005/2006 season, 80% of the spot shrimp catch was landed as whole shrimp. The 2005/2006 season was opened for 37 days, the exact same length as the season before which had been the longest season length since the 1995/96 season. The effort in the 2005/2006 season was above the ten-year average with 13 boats fishing and was the highest since 1998/1999. The catch included 21,494 lbs of spot shrimp and 3,453 lbs of coonstripe shrimp.

The District 8 GHL will remain at 20,000 lbs of spot shrimp for the 2006/2007 season.

The stock appears to be stable. It is anticipated the fishery will close around November 5.

DISTRICT 9

District 9 includes waters of Chatham Strait north of Cape Decision to Coronation Island to Cape Ommaney, south of the latitude of Point Gardner, and in waters of Frederick Sound and Rocky Pass west of Point Macartney to Elliott Island and north and west of Point Camden to Salt Point. Fishing is concentrated in a small number of bays along the southern Admiralty shoreline and eastern Baranof shoreline. The more important fishing subdistricts include 109-10, 109-20, and 109-30. Since significant catch occurs in both Section 9-A and 9-B, management responsibility has shifted between the Sitka and Petersburg area offices on alternate years.

Prior to statehood and through the 1994/1995 season there were no season or quota restrictions in District 9. The GHR for District 9 was set at 15,000 lbs of shrimp in the 1995/1996 season using the baseline harvest from the 1990/1991 season through the 1994/1995 season. This was modified to 0 to 18,000 lbs of spot shrimp when the department revised the tail weight to whole weight ratio of 1.67 to 2.0 for the 2000/2001 season. The catch of coonstripe shrimp was no longer included in the GHR starting in the 2000/2001 season. The effect of removing that catch was minimal since the harvest of coonstripe shrimp has totaled less than 2,000 lbs since the GHR was initiated. The average harvest of spot shrimp since the start of the 1995/1996 season is 19,300 lbs. The average harvest of coonstripe shrimp during that same period is 160 lbs. Effort in the district has varied between 5 and 16 boats. In the 2005/2006 season, catcher-processors landed 55% of the catch and 54% of the catch was landed as whole shrimp. During the

2005/2006 season, the fishery was opened for 19 days which is the shortest season on record. Six vessels landed 20,252 lbs of spot shrimp and no coonstripe shrimp.

The District 9 GHL will remain at 18,000 lbs of spot shrimp for the 2006/2007 season.

To manage the fishery in 2006/2007 department area staff will rely primarily on fish tickets and reporting by catcher-processors, and may also survey and sample the fishery from the grounds as scheduling and budgets allow. In the latter case, a field announcement of a closure is possible. The stock strength of this district is uncertain. It is anticipated that the 2006/2007 season will close around October 20.

DISTRICT 10

District 10 includes the waters of the central portion of Frederick Sound and the southern portion of Stephens Passage. Fishing is concentrated along the mainland shoreline north of Cape Fanshaw and in the bays along the Admiralty shoreline. Prior to statehood, the fishing season east of Cape Fanshaw occasionally corresponded to the beam trawl fishery season with the fishery opening in mid-April or early May and closing between late January and late February. The first three and a half decades following statehood there were no season or quota restrictions in District 10. Each season since then, closures have occurred prior to March 1. The first GHR for District 10 of 0 to 30,000 lbs of shrimp was set in the 1995/1996 season using the baseline harvest from the 1990/1991 season through the 1994/1995 season. This was modified to 0 to 36,000 lbs of spot shrimp when the department revised the tail weight to whole weight ratio of 1.67 to 2.0 for the 2000/2001 season. The catch of coonstripe shrimp was no longer included in the GHR starting in the 2000/2001 season. The effect of removing that catch was minimal since the harvest of coonstripe shrimp has been less than 2,000 lbs since the GHR was initiated. The average harvest of spot shrimp since the start of the 1995/1996 season is 45,800 lbs. The average harvest of coonstripe shrimp during that same period is 1,200 lbs. Effort in the district has varied between 14 and 49 boats fishing during that same period. The season length has varied considerably, between 8 and 98 days. For the 2005/2006 season, catcher-processors landed 36% of the catch and 34% of the catch was landed as whole shrimp. During the 2005/2006 season, the fishery was opened for 8 days, the shortest season on record. Seventeen boats caught 53,292 lbs of spot shrimp and no coonstripe shrimp.

The District 10 GHL will remain at 48,000 lbs of spot shrimp for the 2006/2007 season.

The guideline was increased from 36,000 lbs beginning with the 2004/2005 season. The stock strength appears moderate. Although limited sampling data indicate a declining shrimp size, commercial catch rate trends remain positive. The season is expected to close around October 7.

SITKA AREA FISHERIES

INTRODUCTION

The Sitka fishery management area includes all waters of District 13, Section 9-A, and Statistical Areas 112-11, 112-21, and 12-22 of District 12. For the pot shrimp fishery District 13 has been divided into two areas, each managed with separate GHRs. One area consists of all waters of Section 13-C (Hoonah Sound and Peril Strait) and the other area consists of all waters of Sections 13-A and 13-B (outer coastal area of District 13). The offshore areas of Sections 13-A and 13-B include the waters of the EEZ. District 13 has a customary and traditional finding for shrimp. The BOF also has closed the Sitka Sound special use area (5 AAC 31.136 (3)) to both

the sport and the commercial harvest of shrimp. District 9 is managed with a single GHL and encompasses waters within both the Petersburg and the Sitka management areas. With significant harvests occurring in both management areas, responsibility for managing the District 9 fishery has been shared between the Petersburg and Sitka area offices. The District 9 fishery will be managed by the Petersburg area office during the 2006/2007 season. The District 12 fishery is managed out of the Juneau area office since relatively little effort occurs within the Sitka management area.

SECTION 13-C

Section 13-C consists of waters of Hoonah Sound and Peril Strait west of a line from Point Hayes to Point Thatcher and north of Pogibshi Point.

The waters of Section 13-C contain the most productive pot shrimping grounds in the Sitka management area. This area has been the focus of the Sitka area pot shrimp fishery throughout the fishery's development. The first commercial landings of pot shrimp from Section 13-C occurred during the 1977/1978 fishing season with minimal harvest through the 1980/1981 season. For the next thirteen years, from the 1981/1982 through the 1993/1994 fishing seasons, effort and harvest steadily increased with 6 to 19 boats participating and landing between 10,000 and 40,000 pounds whole weight. During this period, the Section 13-C fishery was open year round with landings occurring year round.

The 1994/1995 season was pivotal in the history of the fishery. During that season, a floating processor moved into Section 13-C in response to a strong Japanese market for frozen whole shrimp. This resulted in a substantial increase of harvest in Section 13-C. Concerned with rapidly increasing harvest and having little information on stock size and productivity the department closed all of District 13 by emergency order. This was the first ever pot shrimp fishery emergency order closure in Southeast Alaska. The total 1994/1995-season harvest in Section 13-C was 81,000 pounds whole weight, double any previous year's harvest. Other productive areas throughout Southeast Alaska had seen similar trends prompting the department to establish GHRs for all districts in the region. For districts with a relatively consistent harvest history, the upper end of the GHR was based on the average harvest over the previous five seasons. The high harvest of the 1994/1995 season was not included in the calculation and the resultant 1995/1996 GHR for District 13 was 40,000 pounds whole weight. In 1996/1997 Section 13-C was allocated a GHR of 25,000 pounds whole weight and Sections 13-A and 13-B together were allocated 15,000 pounds whole weight consistent with historical harvests from each area. The GHR for 13-C was increased to 30,000 pounds for the 2000/2001 fishing season as a result of using a more appropriate conversion factor of tail weight to whole weight. This change did not result in any real change to the amount of shrimp available for harvest in 13-C. In the Hoonah Sound area of Section 13-C, there is a significant but unaccounted subsistence and sport harvest that occurs year round.

Since the establishment of a GHR, the harvest and the number of vessels participating in the Section 13-C fishery has remained relatively stable. However, with increased value and management to limit harvest to the upper end of the GHR, the fishery has greatly intensified resulting in shorter and shorter seasons. For the past four seasons the 13-C fishery has been managed by conducting an over-flight shortly after the fishery opens to determine the effort level and set distribution, followed by on-the-grounds monitoring and skipper interviews to determine catch rates and to collect catch samples. During the 2003/2004 fishing season, 18 vessels

harvested 42,308 pounds whole weight shrimp and the fishery was open only five days. This harvest exceeded the 30,000-pound GHR by 40% and was higher than the 2002/2003 season harvest of 38,340 pounds also taken in a 5-day fishery. The Section 13-C GHL for the 2004-2005 season increased 40% from the 2003–2004 season to 42,000 pounds of spot shrimp. This increase in GHL was based on positive trends in both fishery-dependent and fishery-independent data sources. The 2004–2005 harvest was 34,270 lbs of shrimp, which was taken in 5 days. The GHL for 13-C was not achieved during the 2004–2005 due to inclement weather on the day of the closure forcing fishermen to quit before the closure time. The 2005–2006 season lasted 6 days with 20 boats harvesting approximately 43,473 pounds round weight of spot shrimp. Both survey and sampling data with good sample sizes are available for this section and both indicate a declining shrimp size; however, fishery catch rate remains strong. Thus, stock strength is considered moderate.

As a general policy the department has recommended that either increases or decreases in GHL's remain in place for at least three seasons before consideration of further changes. **The 2006–2007 season will be the third season with the newly established 42,000 pounds GHL.**

Shrimpers can expect the 2006/2007 season to last five or six days, similar to last season. Department managers will make a field announcement of closure time over the VHF radio. The department attempts to give as much notice as possible before a closure but closure announcements may provide as little as 24-hour notice. Catcher-processors will be exempt from weekly reporting requirements for this fishery due to the short duration of the Section 13-C fishery.

SECTIONS 13-A AND 13-B

The pattern of fishery development in Sections 13-A and 13-B was similar to that of Section 13-C. The first reported commercial harvest of pot shrimp occurred during the 1978/1979 fishing season and harvests remained below 5,000 pounds whole weight through the 1989/1990 fishing season. From the 1990/1991 through the 2001/2002 fishing season, harvests have ranged from 9,500 pounds to 30,000 pounds, averaging 16,300 pounds whole weight. A GHR of 15,000 pounds whole weight has been established for the Section 13-A and Section 13-B fishery since the 1996/1997 fishing season. Since the establishment of the GHR for Section 13-A and Section 13-B, the fishery has shown a trend in season length opposite to the more productive areas in the region. During the first season the GHR was in place, the season lasted 56 days, the following season lasted 69 days, and the past five seasons have remained open until the regulatory closure of February 28 or 151 days. During each of the past four seasons around 15,000 pounds whole weight have been harvested. With demand for product currently at high levels, this trend is indicative of generally low productivity of shrimp in the outer coastal areas. Almost all of the harvest comes from the bays and inlets and the department is concerned that localized depletion may be occurring in some areas.

During the 2003/2004 season, 14,008 pounds, whole weight, of shrimp were landed by eleven vessels and the fishery remained open until February 28, 2004. The 2004–2005 season lasted 65 days during which 18,666 lbs were harvested. This was the shortest season since 1996. Four of the previous five seasons remained open until the winter season closure on February 28 or 152 days.

The 2005–2006 season lasted 30 days during which 13,480 pounds round weight of spot shrimp were harvested. This was the shortest season since the inception of the fishery. There is no survey and there has been very limited biological sampling of shrimp from Sections 13-A/B. However, fishery performance data suggests that the stock strength is moderate. Since most of

the harvest is generally from a few specific bays on the West Coast of Baranof Island, localized depletion effects are of concern but not substantiated.

The GHL for 2006–2007 will remain at 15,000 lbs of spot shrimp. For the 2006/2007 fishing season, harvesters can expect a season length similar to the 2005/2006 fishing season. Shrimpers are advised that the department will be monitoring catch rates as an indicator of stock strength. If a pattern of reduced catch rates is evident it may be necessary to close the fishery or specific areas before the upper end of the GHR has been harvested to protect the resource from localized depletion as well as to provide for subsistence use of the resource. Catcher-processors participating in the Section 13-A and Section 13-B fishery will be required to report their catch and effort information to the department on a weekly basis beginning October 4, 2006.

JUNEAU/HAINES AREA FISHERIES

INTRODUCTION

The Juneau/Haines fishery management area encompasses Districts 11, 12, 14, 15, and 16. The pot shrimp fishery is managed for spot prawns in Districts 12 and 14, where spot prawns typically comprise over 95% of the shrimp harvest. Districts 15 and 16 are managed for coonstripe shrimp, which typically comprise 75–100% of the harvests in those districts. District 11 is managed for a combined spot and coonstripe GHR since the two species have contributed similar amounts to historical harvests in the district.

DISTRICT 11

District 11 includes those waters of Stephens Passage north of a line from Point League to Point Hugh, waters of Seymour Canal north of 57°37' N. latitude and waters that are south of the latitude of Little Island Light and east of a line running from Little Island Light to Point Retreat Light. Important shrimp fishing areas in the district include Seymour Canal, Endicott Arm, and Port Snettisham.

Prior to the 1995/1996 season the district was open year-around to commercial pot shrimp fishing. Between the 1990/1991 and 1994/1995 seasons, harvests averaged 2,000 lbs of shrimp. A GHR of 0 to 20,000 lbs of shrimp was established for the district starting with the 1995/1996 fishing season. Effort levels and harvests increased substantially beginning that season. The 1995/1996 season was closed by emergency order in June 1996, and the 1996/1997 season was closed in May 1997 when the GHL was reached. The 2005–2006 season equaled the 2004–2005 season as the shortest fishing season in District 11 with the fishery closing by emergency order on November 12, 2005 with 23,347 pounds of spot and coonstripe shrimp harvested. The stock status of spot shrimp in this district is **moderate** and that of coonstripe shrimp is **uncertain**. There is no survey data and very little sampling data available for this district. Although the dockside sampling data indicate a decline in average spot shrimp carapace length and a decline in L_{50}. 2005 sample sizes are small and are from only one subdistrict. Weekly catch reporting requirements for catcher-processors will be in place for the entire season.

The District 11 GHL will remain at 20,000 lbs of spot and coonstripe shrimp for the 2006/2007 season.

DISTRICT 12

District 12 includes those waters of Lynn Canal and Chatham Strait south of the latitude of Little Island Light, north of the latitude of Point Gardner, west of a line running from Little Island Light to Point Retreat, east of a line running from Point Couverden to Point Augusta, and east of a line running from Point Hayes to Point Thatcher. The district crosses management areas, with those waters along the western shoreline of Chatham Strait south of Point Hayes being located in the Sitka management area. Because most of the area is in the Juneau portion of the district, District 12 is managed by the ADF&G Juneau area office with assistance from the Sitka office as needed.

Prior to the 1995/1996 season, the district was open year-around to pot shrimping. GHR was established at 0–20,000 lbs for the district starting with the 1995/1996 fishing season. Annual catches during the 1990/1991 to 1993/1994 seasons averaged 22,400 lbs, 93% of which was spot shrimp. The harvest increased dramatically to 58,900 lbs during the 1994/1995 season when a floating processor operated in the district. The season steadily shortened from 127 days during the 1995/1996 season to 7 days for the 2000/2001 season.

Since the 2001/2002 season, District 12 has been managed as two separate fisheries. Prior to this season, effort continued to concentrate in Tenakee Inlet accelerating the pace of the fishery. During the 2000/2001 season, 100% of the 20,000 pound GHR for District 12 was taken from the waters of Tenakee Inlet in just 7 days, forgoing known opportunity existing in the remainder of the district. For the 2001/2002 season, a 20,000 pound GHR for Tenakee Inlet was established, and a 15,000 pound GHR was established for the remainder of the District.

For the 2005/2006 season, the GHL for Tenakee Inlet was increased 40% to 28,000 pounds of spot shrimp. The fishery landed 36,436 pounds of spot shrimp in five days. The stock strength of Tenakee Inlet is **moderate**, with mixed biological indicators. Survey data indicates no observable change in the average carapace length, but a decline in the L50 length. Due to the rapidity of the Tenakee Inlet fishery, the department will monitor catch and effort levels and announce the closure on the grounds. The department anticipates the pace of the fishery in Tenakee Inlet will be similar to the last three seasons when the fishery lasted between 3 and 6 days. Catcher-processor weekly call-in requirements will be waived for the Tenakee fishery.

The Tenakee Inlet GHL will remain at 28,000 lbs of spot shrimp for the 2006/2007 season.

In the remainder of District 12, 13,521 pounds of spot shrimp were harvested during the 2005–2006 season in 16 days, the shortest season since District 12 was split from Tenakee Inlet. The stock status of this district is **uncertain**. No survey or sampling data is available for this area. Effort has been steady and the season length has decreased, with the bulk of the harvest taken from two bays in the area. Since most of the harvest is from two bays, localized depletion effects are of concern but not substantiated. Landing information will continue to be monitored and the department may close specific bays if needed to distribute effort and harvest. Weekly catch reporting requirements for catcher-processors will be in place for the entire season.

The remainder of District 12 GHL will remain at 15,000 lbs of spot shrimp for the 2006/2007 season.

DISTRICT 14

District 14 includes those waters of Icy Strait west of a line from the southernmost tip of Point Couverden to Point Augusta Light, east of a line running from the southernmost tip of Cape Spencer through Yakobi Rock, and ending at Yakobi Island, and waters that are north of a line running from the northernmost point of Soapstone Point to the westernmost point of Column Point. Federal regulations prohibit all shrimp fishing in those waters of Glacier Bay proper (north of a line from Point Carolus to Point Gustavus).

The District 14 fishery had small, sporadic effort until the 1994/1995 season. With an increase in effort between the 1994/1995 and the 1999/2000 seasons, spot shrimp harvests in the district increased to average just over 7,000 pounds annually. From the 2000/2001 season to the 2004/2005 season, with additional effort and efficiency, the average harvest in District 14 increased to 20,500 pounds of spot shrimp. However, the 2005–2006 harvest was 15,845 lbs of spot shrimp and the season lasted 151 days. The stock status of this district is **poor**. Although no survey data are available for this district, limited dockside sampling data indicate a declining trend in mean carapace length and L_{50}. Effort has decreased due to disinterest and season length more than doubled. The bulk of the harvest has been consistantly taken from one subdistrict in the eastern third of the district. Fish ticket logbook data indicate overall declining catch per pot and fishermen's reports indicate possible serial depletion in the productive zone over the course of the season. Even with the increased season length, the GHL failed to be taken during the 2005–06. Weekly catch reporting requirements for catcher-processors will be in place for the entire season.

The District 14 GHL will decrease to 15,000 lbs of spot shrimp for the 2006/2007 season.

DISTRICT 15

District 15 includes those waters of Lynn Canal north of the latitude of Little Island Light. The District 15 pot shrimp fishery is managed from the Haines area office. The majority of the pot shrimp harvest in Lynn Canal is composed of coonstripe shrimp. Important fishing areas include Lutak Inlet, Chilkoot Inlet, Taiya Inlet, and Chilkat Inlet.

Prior to the 1996/1997 season the district was open year-around to commercial pot shrimp fishing. The average harvest between the 1990/1991–1994/1995 seasons was 3,200 pounds, 75% of which was coonstripe shrimp. A 0–20,000-pound GHR was established for the district starting with the 1995/1996 fishing season. Effort and harvests have rapidly increased since the 1996/1997 season through the 2002/2003 season, averaging over 20,000 pounds, 99% of which was coonstripe shrimp. The fishery has closed early by emergency order during the 1995/1996 through the 2002/2003 seasons. Harvests of shrimp from catcher-processors have increased during these years as well, where over 50% of the total harvest was taken by catcher/processors. Due to concerns over serial depletion in core fishing areas, Lutak Inlet was not opened to commercial shrimp fishing north of the latitude of Tanini Point during the spring/summer fishery in 2004 and Lutak Inlet was closed north of a line from Tanini Point to Taiya Point during the 2005 spring fishery. The GHL was reduced from 20,000 pounds to 15,000 pounds during the 2005/2006 season.

stock status of this district is **poor and will be closed for the 2006–2007 season**. Catch rates in core areas remain well below average. Recent trends include decreasing effort and increasing season length with the majority of the harvest taken from a single sub-district. The 2005–2006

District 15 harvest was 4,230 lbs of coonstripe shrimp and the district closed for the season on February 28, 2006. There are no positive trends in this fishery. Reduced catch rates (catch/pot/lift), decreasing mean carapace length from limited dock side samples and reports of serial depletion in areas of historical high abundance are indicative of poor stock status. To further protect this stock, Sport Fish Division has closed the taking of shrimp in Lutak and Taiya Inlets through the end of 2006 under sport fishing regulations and will extend this closure through 2007. Alaskan residents will be allowed to harvest shrimp under subsistence regulations in District 15

The department's decision to close District 15 was based on:

1. Declining trends in mean carapace length from limited dockside sampling.
2. Increased season length and failure to harvest the GHL in the past 3 seasons.
3. Recent years' harvest is from areas other than historical core fishing zones.
4. Fish ticket data indicates overall declining catch per pot and fisherman reports indicate serial depletion in areas of historical high abundance.
5. No pre-season assessment surveys are done in this district, and little dockside sampling exists.

The Southeast Alaska Pot Shrimp Management Plan specifies a 0–20,000-pound GHR for coonstripe shrimp in Lynn Canal. Due to the poor fishery performance described above, **the department will close the District 15 commercial and sport pot shrimp fisheries for the 2006/2007 season**.

DISTRICT 16

District 16 includes those waters that are north of a line running west from the southernmost tip of Cape Spencer and south of a line running southwest from the westernmost tip of Cape Fairweather. The offshore area of District 16 includes the waters of the EEZ. The major shrimp fishing area in District 16 is Lituya Bay and coonstripe shrimp typically dominate the harvest.

Shrimp harvests in District 16 averaged 2,900 lbs during the year-around seasons between 1990/1991–1994/1995, with spot shrimp comprising 58% of the harvest. The 0 to 20,000 pound GHR for coonstripe shrimp was established for the district starting with the 1995/1996 fishing season. Coonstripe shrimp harvests in the district appeared to be stable from 1996/1997 through 2001/2002 with an average harvest of 17,000 lbs. Season length declined during this period with constant effort and a relatively stable harvest level. Following the 2001/2002 season, the trend for this population appears to be declining. In 2004/2005, the GHL was reduced to 15,000 lbs of coonstripe shrimp due to steadily decreasing harvest and CPUE levels, and increasing season length with stable effort levels. Since the 1996/1997 season the entire harvest has come from one small bay in the district. District 16 was closed to shrimping in 2005/2006, and will remain closed at least until 2007/2008.

District 16 will be closed for the 2006/2007 season.

POT SHRIMP RESEARCH

The pot shrimp fishery for spot and coonstripe shrimp in Southeast Alaska has seen a 10-fold increase in participating vessels since 1960 and associated increases in harvest levels and fishery intensity. This has led to effort restrictions and to season length reductions, including limited entry in 1996. It became clear that in order to provide adequate information to manage for sustained harvest, a program of monitoring and sampling of commercial harvests and fishery independent surveys was needed. Thus, over the past 9 years a diverse program of stock assessment information collection has been developed. The fishery-dependent information collection consists of dockside sampling, sporadic onboard observing, a voluntary logbook program for catcher-processors, and on-the-grounds sampling by managers. Dockside sampling occurs in the ports of Ketchikan, Wrangell, Sitka, Petersburg, Haines, and Juneau. Observers have sampled aboard vessels in Districts 1 and 2. On-the-grounds sampling is used to obtain information on the size composition of commercial catches in unsurveyed districts as well as to determine effort levels and catch rates, and to monitor progress towards the GHLs thus providing for timely closures. The fishery-independent survey program provides the most representative and consistently collected information available for assessment of stock status but covers only Districts 3, 7, 12, and 13. We will describe some of the results here.

ADF&G initiated the survey program in 1996 with objectives of obtaining an index of abundance, size composition, sex ratios, and size at first spawning of spot and coonstripe shrimp in each district surveyed. The first survey, with the objective of testing methods and protocols, was conducted in 1996 in Ernest Sound of District 7. A variety of setting styles, pot types, and mesh sizes were tested. These included singly set pyramid pots with a 4 by 4 foot base, and two types of longlined cone pots; one 42 inches in diameter with 1⅛–inch mesh and four tunnels, the other 42 inches in diameter with 1¾–inch mesh and three tunnels. The large, singly set pyramid pots were time-consuming to set and retrieve and did not fish well. The result was that fewer pots could be fished. The longlined cone pots proved easier to set and retrieve. Mesh size comparisons indicated that conical pots with 1¾–inch mesh also provided the greatest power to detect differences in the relative abundance of commercially recruited shrimp. In order to facilitate comparison with commercial gear, a spacing of 10 fathoms between longlined pots was established. Based on comparisons of catch rates, this pot spacing seemed to be adequate to minimize effects of adjacent pots attracting shrimp from one another, thus providing discrete samples of shrimp within the fished habitat for any given pot within a string.

The preseason survey program was subsequently expanded, first to the Cordova Bay area in Section 3-A in 1997, followed by Hoonah Sound in Section 13-C beginning in 1999 and Tenakee Inlet in District 12 in 2000. Survey effort distribution is described in Table 5.

In order to minimize variability in catch rates and provide more accuracy when conducting analyses, index set locations and standardized methods were established; these began in 1998 for District 3, in 1999 for District 7 and 13, and in 2000 in District 12. Locations of statistical areas of Districts 3, (Section 3-A), 7 (Ernest Sound), 12 (Tenakee Inlet) and Section 13-C (Hoonah Sound) in which standardized pot shrimp surveys have been conducted in Southeast Alaska are shown in Figure 3.

Postseason surveys were conducted from 1999–2002 for District 3 and in 2001 and 2002 for District 7. The primary objective of the postseason surveys was to obtain a harvest rate estimate by comparing the ratio of pre- to postseason size-specific abundance. While removals by the

fishery were quite evident between pre- and postseason surveys (Figure 4, 5, 6), interpretation of results collected using this method has been somewhat complicated by shrimp behavior and gear fishing characteristics (Clark and Love 2003).

Preseason surveys of Districts 3, 7, 12, and 13 were conducted in September 2006, however postseason surveys have been discontinued. A summary of the catch rate and mean carapace length data collected to date for pre and postseason surveys of Districts 3, 7, 12, and 13 are presented in Table 6–15. Figure 4–17 show survey trends in spot shrimp length frequency and catch rate by size class. These results are summarized in the following paragraphs.

DISTRICT 3, SECTION 3-A

Catch Rates

Catch rates for spot shrimp were calculated both in terms of overall weight and numbers and by size category (Table 6 and 7; Figure 7). The 2005 catch rate was comparable in terms of both weight and numbers for both mesh sizes to 2004, and 2003, continuing the decline seen since the 2002 survey. Preseason survey catch rates were generally greater than postseason survey catch rates in terms of number and weight for small and large mesh pots (Table 6 and 7). The overall variability around the mean number and weight of shrimp caught was greater for small than large mesh pots. Variability in catch rate in terms of weight was generally greater for post than preseason surveys while the reverse was true of variability in terms of numbers. The catch rate of the largest size, XXXL, shrimp has never been high in District 3; the catch rates of XXL, and XL shrimp continued to decline in the 2005 survey (Figure 7). This decline was balanced by an increase in the catch rate of XS shrimp in both mesh sizes and subdistricts.

Size Composition

The 2005 mean carapace length in preseason surveys continued to decline for small and large mesh pots in both Nutkwa Inlet (103-23) and Hetta Inlet (103-25) (Table 8). The L_{50} or length at which half of the shrimp have transitioned from male to female is 37–39 mm CL in this district (Love and Bishop 2005).

Over the period 1997–2005, the contribution of the 43–46 mm female size mode in Subdistrict 103-25 and the 40–43 mm mode in 103-23 have diminished (Figure 4, 5, and 6). As a result, the size composition of the survey catch in both areas has become more unimodal and the relative catch of smaller size classes has increased resulting in a shift of the mode to a smaller size. This is particularly evident in small mesh pots. Preseason spot shrimp survey catches from 1997–2005 consisted of more large shrimp than postseason (Figure 4, 5, and 6). However, the catch rate of small shrimp postseason increased relative to preseason in some cases. This is likely a result of increased postseason catchability following the removal of large shrimp. This observation suggests that the multi-year trend of increases in catches of small shrimp is due more to increases in their catchability than to recruitment events.

DISTRICT 7

Catch Rates

The 2005 preseason catch rate, in terms of number per pot and kg per pot, increased substantially relative to 2004 for both subdistricts and mesh sizes (Table 9). Postseason surveys in District 7 were conducted during 2001 and 2002. Postseason mean catch rates, district-wide for all years of the survey, were approximately half what was caught during preseason surveys by both weight

and number. Variability in catch rates was also slightly higher for preseason surveys as compared to postseason by both weight and number (Table 9 and 10). This increase in catch rate was driven largely by an increased catch rate of XS, S and M-sized shrimp. The catch rate of XXXL shrimp continues to decline (Figure 11). However, as catch rates in this district have for some time been low enough that gear saturation is less likely to be an issue; this may be evidence of a recruitment event, rather than simply increased catchability of small shrimp due to removal of large ones.

Size Composition

Relative to historic data, spot shrimp mean carapace length remained low in 2005 for both Subdistrict 107-10 and 107-20 (Table 11). Mean spot shrimp carapace lengths in District 7 have historically been substantially higher than for District 3. The L_{50} is 42–43.5 mm CL in this district (Love and Bishop 2005) so most shrimp above this size are female.

Only in Subdistrict 107-20 of District 7 are sample sizes and survey history sufficient to permit detection of size trends. These length frequencies show a trend of increasing predominance of smaller size classes, and a tendency for the size distribution to become increasingly unimodal as the contribution of larger female size classes diminishes (Figure 8, 9, and 10).

DISTRICT 12, TENAKEE INLET

Catch Rates

Survey catch rates in District 12 declined substantially in terms of both weight and numbers for all subdistricts and both mesh sizes in 2005 (Table 12). Small mesh pots caught more than large mesh pots in terms of both weight and numbers. No postseason surveys have been conducted in District 12. Small mesh pots were more variable than large mesh pots in terms of numbers. The catch rate by size (Figure 14) showed decreases for all size classes in Subdistricts 112-41, and 112-42 while in Subdistricts 112-45 and 112-48 the decline appeared related to a large decrease in the abundance of size L shrimp.

Size Composition

Spot shrimp mean carapace length from the 2005 survey declined slightly in District 12 Subdistricts 112-41, and 42, and 45 in small mesh and 112-41 for large mesh but remained stable in 112-48 small mesh and 112-42, 45, and 48 large mesh pots (Table 13). The L_{50} is 43–44 mm CL in this district (Love and Bishop 2005).

In Prince William Sound, mean spot shrimp growth from 28.5–42.5 mm CL averages 3.2 mm per year (Kimker et al. 1996). Thus, examination of the length frequency histogram in Subdistrict 112-45 indicates that the strong 36 mm male mode present in the 2003 survey grew to the 40 mm mode in the 2004 survey and 44 mm in the 2005 survey. This phenomenon is less pronounced in Subdistricts 112-41, and 42 (Figure 12, 13, and 14). However, as in other survey areas, the contribution of larger, female size classes has decreased for this area also and there is an increased tendency of the fishery to rely upon a single large year class.

DISTRICT 13, SECTION 13-C

Catch Rates

Survey catch rates in District 13 continued to decline by both weight and number in Subdistrict 113-55, and 113-57 during the 2005 survey; however Subdistrict 113-58 catch rates remained

very similar to or slightly above 2004 levels (Table 14). No postseason surveys have been conducted in District 13. Catch rates by size class reveal that catch rates are being buoyed by strong catches of XS, S, M, and L sizes but XXL sizes nonetheless remain a substantial proportion of the catch in all three subdistricts (Figure 17).

Size Composition

Carapace length remained steady or increased for all three subdistricts for both mesh sizes during the 2005 survey (Table 15). Section 13-C Spot shrimp are slightly larger on average than District 3 and similar in size to Districts 7 and 12. The L_{50} is 41–43.5 mm CL in this district (Love and Bishop 2005).

Length frequency histograms for 1999–2005 preseason surveys in District 13 show that although the contribution of the larger 45–48 mm female size class has decreased slightly, the 42–45 mm size class remains robust and has even increased slightly in 2005 (Figure 16). There has not been the dramatic shift of the mode to a smaller size as observed in District 3.

RESEARCH SUMMARY

Stock assessment surveys are one piece of the picture considered in the management of the shrimp pot fishery of Southeast Alaska. Commercial harvest, and dockside and onboard shrimp sampling data are also used in setting annual GHLs. However, given the proven ability of fishers to maintain stable catch rates while population sizes are decreasing (Orensanz et al. 1998), fishery independent surveys provide an important additional view of stock status. As only a portion of the important commercial pot shrimp grounds are currently surveyed, continuing to improve the usefulness of sampling and fishery data must also be a focus.

Our analyses indicate that recruitment and growth over fishing (Boutillier and Bond 1999) has occurred in Districts 3 and 7, and that populations remain moderately healthy in District 12, Tenakee, and District 13, Section 13-C. GHL reductions were implemented for Districts 3 and 7 in 2004 and will be continued for an additional season before being re-assessed. The District 12, Tenakee Inlet and District 13, Section 13-C GHLs were increased, respectively in 2005, and 2004. Unless catastrophic stock changes are in evidence, GHL changes remain in effect for 3 seasons before being re-assessed. Management recommendations for unsurveyed districts, which are made above, are the result of thorough examination of fishery, port sampling, and management cruise data.

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TABLES AND FIGURES

Table 1.–Historical harvest of spot shrimp (whole weight) in the Southeast Alaska commercial pot shrimp fishery by District/Section, 1971–2006.

Season	101	102	3-A	3-B/C	104	105	106	107	108
Oct 1971-Sep 1972	1,408							212	
Oct 1972-Sep 1973								625	
Oct 1973-Sep 1974		7,274							
Oct 1974-Sep 1975	2,692	1,250							
Oct 1975-Sep 1976	6,346	11,478	490						
Oct 1976-Sep 1977	1,940	9,582		926				3,268	
Oct 1977-Sep 1978	4,897	14,141				732		3,815	
Oct 1978-Sep 1979	4,163	6,703	1,570		1,280			2,167	
Oct 1979-Sep 1980	15,079	12,014	6,289					16,622	227
Oct 1980-Sep 1981	15,210	13,821	24,552	435	368		493	16,637	358
Oct 1981-Sep 1982	25,278	17,531	53,101	3,574			7,168	14,943	1,583
Oct 1982-Sep 1983	28,778	34,720	83,885	565	772		7,464	71,384	2,657
Oct 1983-Sep 1984	40,550	22,427	30,192	6,191	480	1,050	7,589	82,364	15,062
Oct 1984-Sep 1985	68,871	50,421	17,985	556	34	244	6,133	80,020	8,582
Oct 1985-Sep 1986	35,282	37,105	70,936	212	878	104	5,373	21,212	1,702
Oct 1986-Sep 1987	60,044	136,456	45,624	3,243		1,132	1,379	37,996	1,266
Oct 1987-Sep 1988	116,204	79,769	27,432	30	100	1,686	483	49,094	2,357
Oct 1988-Sep 1989	196,834	62,683	15,029	4,664	714	3,876	6,742	60,009	796
Oct 1989-Sep 1990	151,758	68,515	19,850	6,972	2,696		7,290	42,020	17,272
Oct 1990-Sep 1991	178,471	78,428	49,214	11,744	11,288		9,038	93,881	12,654
Oct 1991-Sep 1992	161,643	81,481	269,507	4,828	438	706	19,484	112,191	13,482
Oct 1992-Sep 1993	157,056	70,100	218,043	3,244	4,674	846	23,830	57,822	17,884
Oct 1993-Sep 1994	146,094	119,300	272,916	14,716	5,398	1,884	39,044	105,566	19,141
Oct 1994-Sep 1995	156,742	76,498	214,955	16,515	1,002	21,628	129,327	169,926	23,211
Oct 1995-Sep 1996	173,137	89,724	196,607	48,493	23,135	34,614	73,577	100,675	8,074
Oct 1996-Sep 1997	165,991	82,303	232,547	48,100	20,513	23,174	77,642	102,594	25,294
Oct 1997-Sep 1998	138,759	83,886	222,132	5,878	10,217	5,931	70,182	96,932	17,233
Oct 1998-Sep 1999	158,348	75,321	205,818	7,960	6,071	5,471	64,010	63,870	15,797
Oct 1999-Sep 2000	154,980	76,091	226,900	7,026	16,612	11,719	67,005	75,868	20,816
Oct 2000-Sep 2001	159,316	121,953	266,837	36,508	20,343	13,791	77,318	100,768	21,708
Oct 2001-Sep 2002	169,544	103,774	255,370	62,721	10,337	7,857	70,919	103,328	17,464
Oct 2002-Sep 2003	152,022	89,581	264,653	53,553	22,153	19,049	68,293	99,250	22,105
Oct 2003-Sep 2004	170,113	96,687	284,808	64,839	20,364	17,733	69,808	104,394	20,867
Oct 2004-Sep 2005	159,234	88,258	256,392	46,497	19,296	21,498	65,487	80,072	18,935
Oct 2005-Sep 2006	160,546	83,052	202,186	56,051	18,579	19,282	81,955	79,927	21,494
Average 1996/97–2005/06	158,885	90,091	241,764	38,913	16,449	14,551	71,262	90,700	20,171

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Table 1.–Page 2 of 2.

Season	109	110	111	Tenake	112	13-A/B	13-C	114	115	116	Total
Oct 1971–Sep											1,620
Oct 1972–Sep											625
Oct 1973–Sep											7,274
Oct 1974–Sep											3,942
Oct 1975–Sep											18,314
Oct 1976–Sep											15,716
Oct 1977–Sep							347				23,932
Oct 1978–Sep					1,166	50	63				17,162
Oct 1979–Sep						8	645	270			51,154
Oct 1980–Sep	4,292	2,148			380	98	414				79,206
Oct 1981–Sep	4,309	6	1,004		2,250	1,388	12,730	1,716		2,466	149,047
Oct 1982–Sep	9,386	3,708			440	4,817	10,011	108		450	259,145
Oct 1983–Sep	1,643	14,188	66		3,070	674	19,389			596	245,531
Oct 1984–Sep	2,351	33,342	1,129		1,920	120	16,816	328		3,640	292,492
Oct 1985–Sep	1,643	13,400	255		371		10,953	97	293		199,816
Oct 1986–Sep	4,962	31,974	2,282	1,574	1,746		10,825	159	1,212	3,530	345,404
Oct 1987–Sep	18,234	28,587	2,342	8,071	5,270		21,170	1,716	34	98	362,677
Oct 1988–Sep	6,616	36,302	618	6,122	4,626	3,878	22,417	12			431,938
Oct 1989–Sep	310	47,875	564	1,864	4,710	3,180	26,873			1,052	402,801
Oct 1990–Sep	5,234	42,439		7,004	8,714	11,048	28,560			504	548,221
Oct 1991–Sep	2,866	48,427	1,901	9,804	2,450	23,614	36,417		2,501	2,918	794,658
Oct 1992–Sep	8,893	29,456	8	21,770	4,253	9,506	30,901		834	240	659,360
Oct 1993–Sep	23,702	35,229	1,920	23,516	6,029	20,705	38,938		92	1,432	875,622
Oct 1994–Sep	11,557	85,149	2,403	45,939	12,437	22,173	79,924	2,267	301	3,082	1,075,036
Oct 1995–Sep	25,485	42,180	11,116	25,749	2,158	9,849	38,195	17,154	491	2,664	923,077
Oct 1996–Sep	19,500	51,889	8,919	16,028	12,366	13,156	32,607	4,309	384	3,917	941,233
Oct 1997–Sep	20,836	37,474	7,577	20,291	5,131	12,843	27,336	12,191	125	3,390	798,344
Oct 1998–Sep	17,781	30,182	4,138	28,583	1,390	13,924	50,391	6,651	54	2,169	757,929
Oct 1999–Sep	18,284	36,976	3,091	21,850	1,589	14,114	30,569	240		2,980	786,710
Oct 2000–Sep	20,765	46,099	17,051	25,613		12,914	33,001	17,639	97	3,965	995,686
Oct 2001–Sep	18,243	38,156	15,217	19,777	14,175	13,878	25,822	25,004	24	1,464	973,074
Oct 2002–Sep	15,713	54,706	19,126	21,558	16,904	14,066	38,318	19,903	2	6,763	997,718
Oct 2003–Sep	17,904	61,631	18,852	30,494	19,605	13,606	42,240	19,590	43	1,763	1,075,341
Oct 2004–Sep	17,911	51,592	20,833	23,729	17,627	18,306	34,270	21,282		2,631	963,850
Oct 2005–Sep	20,252	53,292	23,055	36,435	13,521	13,194	43,605	15,845			942,271
Average 1996/97–2005/06	**18,719**	**46,200**	**13,786**	**24,436**	**11,368**	**14,000**	**35,816**	**14,265**	**104**	**3,227**	**923,216**

Table 2.–Historical harvest of coonstripe shrimp (whole weight) in the Southeast Alaska commercial pot shrimp fishery by District/Section, 1975–2006.

Season	101	102	3-A	3-B/C	104	105	106	107	108
Oct 1975–Sep 1976		35							
Oct 1979–Sep 1980								168	257
Oct 1980–Sep 1981		900			54		5		
Oct 1981–Sep 1982	1,050						2,148	554	427
Oct 1982–Sep 1983	1,550		60				305	2,494	19
Oct 1983–Sep 1984	240	39	130	38			139	4,648	851
Oct 1984–Sep 1985	185	81			50		28	5,261	134
Oct 1985–Sep 1986	1,366	436					668	1,829	1,040
Oct 1986–Sep 1987	865	840					792	2,619	744
Oct 1987–Sep 1988	2,360	186					94	1,104	478
Oct 1988–Sep 1989	3,892	92			20		1,252	1,540	56
Oct 1989–Sep 1990	3,521	110		114			1,094	2,176	1,426
Oct 1990–Sep 1991	2,742	456	12	796	76		1,206	3,706	914
Oct 1991–Sep 1992	6,977	2,096	10	96			1,673	11,233	1,807
Oct 1992–Sep 1993	3,042			602			524	6,414	2,183
Oct 1993–Sep 1994	1,839	1,314		1,000			2,164	14,759	6,032
Oct 1994–Sep 1995	3,163	475	56	706			921	29,630	7,217
Oct 1995–Sep 1996	6,126	807		40	148	278	2,216	18,589	1,110
Oct 1996–Sep 1997	5,802	200		317	300	1,066	1,381	25,652	4,465
Oct 1997–Sep 1998	3,925	8					2,373	30,268	2,776
Oct 1998–Sep 1999	4,842	317	141	12		25	2,914	35,975	4,101
Oct 1999–Sep 2000	3,609		5		1	120	3,069	24,673	2,687
Oct 2000–Sep 2001	1,961	10				540	2,124	14,881	1,828
Oct 2001–Sep 2002	4,904			230			116	24,804	2,111
Oct 2002–Sep 2003	5,371			621		514	38	14,262	2,223
Oct 2003–Sep 2004	12,260	24	60	370		4	218	17,268	1,867
Oct 2004–Sep 2005	10,242	266				86	37	10,899	913
Oct 2005–Sep 2006	13,379	8		221			441	7,983	3,453
Average 1996/97–2005/06	**6,630**	**119**	**69**	**295**	**151**	**336**	**1,271**	**20,667**	**2,642**

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Table 2.–Page 2 of 2.

Season	109	110	111	Tenakee	112	13-A/B	13-C	114	115	116	Total
Oct 1975–Sep 1976											35
Oct 1979–Sep 1980											425
Oct 1980–Sep 1981	533										1,492
Oct 1981–Sep 1982	600	6			260		70	80		2,220	7,415
Oct 1982–Sep 1983	226	172								1,850	6,676
Oct 1983–Sep 1984	16				200		1,007			3,364	10,672
Oct 1984–Sep 1985		150					109	182			6,180
Oct 1985–Sep 1986	34		58				80			3,336	8,847
Oct 1986–Sep 1987	190	440	25	410			206			770	7,901
Oct 1987–Sep 1988	534	434		509			320	332			6,351
Oct 1988–Sep 1989		157				16	527			918	8,470
Oct 1989–Sep 1990	14	29	1,828			251	218				10,781
Oct 1990–Sep 1991		297	1,546		1,112	70	171		664	333	14,101
Oct 1991–Sep 1992	26	1,184				1,068	64		759	1,480	28,473
Oct 1992–Sep 1993	700	1,237	1,250	568		40			378	122	17,060
Oct 1993–Sep 1994	3,273	854	200	3,704	164	1,934	942	378	1,660	1,748	41,965
Oct 1994–Sep 1995	525	3,333	669	476	40	7,952	178	96	8,609	2,795	66,841
Oct 1995–Sep 1996	444	6,662	12,214	150		1,188		348	9,519	5,012	64,851
Oct 1996-Sep 1997	10	1,130	11,580	221		2,964	968	2	21,772	16,008	93,838
Oct 1997-Sep 1998	185	2,125	10,307	77		804	84	55	21,833	17,334	92,154
Oct 1998-Sep 1999	275	1,607	4,791	116		1,107	214		22,704	15,415	94,556
Oct 1999-Sep 2000		945	5,057	4		891	28		24,668	16,053	81,810
Oct 2000-Sep 2001	66	145	2,792	14		636			24,119	17,867	66,983
Oct 2001-Sep 2002	196	286	8,366			450	54	16	18,918	18,490	78,941
Oct 2002-Sep 2003	222	4	334		144	802	22		19,559	16,504	60,620
Oct 2003-Sep 2004	304	22	3,162			402	68		6,873	14,476	57,378
Oct 2004-Sep 2005			930		36	196			6,278	6,612	36,495
Oct 2005-Sep 2006			262			888	6		4,230		30,871
Average 1996/97–2005/06	**180**	**783**	**4,758**	**86**	**90**	**914**	**181**	**24**	**17,095**	**15,418**	**69,365**

Table 3.–Historical seasonal closure dates and days fished by District/Section for the Southeast Alaska commercial pot shrimp fishery, 1995/1996 through 2005/2006.

	2005/2006	Days	2004/2005	Days	2003/2004	Days	2002/03	Days	2001/02	Days	2000/01	Days	1999/00	Days
Area	Closure Date	Fished	Closure Date	Fished	Closure Date	Fished	Closure Date	Fished	Closure Dated	Fished	Closure Datea	Fished	Closure Dateb	Fished
1	14 Dec 05	75	20 Dec 04	80	19 Nov 03	49	21 Nov 02	52	19 Nov 01	50	10 Nov 00	41	7 Feb 00	130
2	14 Oct 05	14	14 Oct 04	13	22 Oct 03	21	30 Oct 02	30	28 Oct 01	28	29 Oct 00	29	3 Nov 99	34
3-A	15 Oct 05	15	21 Oct 04	20	17 Nov 03	47	9 Nov 02	41	28 Oct 01	28	10 Oct 00; 4 Nov 00	14	12 Oct 99	12
3-B/C	25 Nov 05	6	15 Oct 04	14	15 Oct 03	14	21 Oct 02	21	15 Nov 01	46	15 Oct 00	15	-	-
4	16 Jul 06	213	28 Feb 05	150	16 Jul 04	213	28 Feb 03	151	31 Jul 02	229	16 Jul 01	213	31 Jul 00	230
5	28 Feb 06	151	22 Jul 05	222	31 Jul 04	229	31 Jul 03	228	31 Jul 02	229	31 Jul 01	229	31 Jul 00	230
6	16 Dec 05	77	21 Oct 04	21	24 Oct 03	24	26 Oct 02	26	27 Oct 01	27	11 Nov 00; 17 Dec 00	51	14 Feb 00	137
7	30 Oct 05	30	6 Nov 04	37	21 Jan 04	113	8 Nov 03	39	8 Nov 01, 10 Dec 01e	71	3 Nov 00	34	24 Nov 99	55
8	6 Nov 05	37	6 Nov 04	37	18 Oct 03	18	31 Oct 02	31	4 Nov 01	35	23 Oct 00	23	22 Oct 99	22
9	19 Oct 05	19	30 Oct 04	30	24 Oct 03	24	1 Nov 02	32	25 Oct 01	25	1 Nov 00	32	26 Nov 99	57
10	8 Oct 05	8	11 Oct 04	11	12 Oct 03	12	16 Oct 02	16	14 Oct 01	14	26 Oct 00	26	30 Oct 99	30
11	12 Nov 05	43	12 Nov 04	43	17 Nov 03	48	12 Dec 02	73	24 Jan 02	116	10 Feb 01	133	31 Jul 00	230
Tenakee	5 Oct 05	5	3 Oct 04	3	6 Oct 03	37	6 Oct 02	6	6 Oct 01	6	7 Oct 00	7	9 Oct 99	9
Rest of 12	16 Oct 05	16	23 Oct 04	23	6 Nov 03	6	31 Oct 02	31	29 Dec 01	90				
13-C	6 Oct 05	6	5 Oct 04	5	5 Oct 03	5	5 Oct 02	5	4 Oct 01	4	5-Oct-00	5	5 Oct 99	5
13-A/B	30 Oct 05	30	28 Feb 04	152	28 Feb 04	152	5 Jan 03	97	28 Feb 02	151	28 Feb 01	151	29 Feb 00	152
14	28 Feb 06	151	7 Dec 04	68	15 Jan 04	107	18 Jan 03	110	27 Jun 02	194	31 Jul 01	229	31 Jul 00	230
15	28 Feb 06	151	30 Jul 05	226	31 Jul 04	230	6 Feb 03	129	28 May 02	163	12 Dec 01	73	10 Jun 00	178
16	closed	0	28 Feb 05	151	28 Feb 04	152	28 Feb 02	151	5 Dec 01	66	20 Nov 01	51	15 Dec 99	76

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District /Section	1998/99 Closure Date[e]	Days Fished	1997/98 [c] Closure Date	Days Fished	1996/97 Closure Date	Days Fished	1995/96 Closure Date[f]	Days Fished
1	5 Jan 99	97	7 Nov 97	38	6 Nov 96	37	2 Jan 96	94
2	5 Jan 99	97	22 Oct 97	22	30 Oct 96	30	10 Jan 96	102
3-A	Oct 9 98, Oct 26-30 98	14	9 Oct 97	9	14 Oct 96	14	13 Nov 95	44
3-B, C	-	-	-	-	-	-	-	-
4	31 Aug 99	335	31 Aug 98	335	29 Aug 97	333	8 May 96	220
5	31 Aug 99	335	31 Aug 98	335	27 Dec 96	88	13 Mar 96	164
6	14 Feb 99	137	3 Nov 97	34	1 Nov 96	32	5 Nov 95	36
7	31 Dec 98	92	24 Oct 97	24	20 Oct 96	20	5 Nov 95	36
8	19 Oct 98; 2 Nov 98;	29	23 Oct; 26 Oct 29 97[h]	27	1 Nov 96	32	5 Nov 95	36
9	2 Dec 98	63	9 Dec 97	70	27 Dec 96	88	11 Mar 96	162
10	20 Nov 98	51	3 Nov 97	34	29 Nov 96	60	6 Jan 96	98
11	31 Aug 99	335	31 Aug 98	335	18 May 97	230	23 Jun 96	266
12	15 Oct 98	15	31 Oct 97	31	18 Nov 96	49	4 Feb 96	127
13-C			10 Oct 97	10	18 Oct 96	18	16 Jan 96	16[i]
Remainder D13	7 Oct 98	7	8 Dec 97	69	25 Nov 96	56	16 Jan 96	16[i]
14	28 Feb 99	151	31 Aug 98	335	30 Sep 97	365	30 Sep 96	365
15	31 Aug 99	335	26 Jun 98	269	30 Sep 97	365	30 Sep 96	365
16	21 May 99	264	8 Dec 97	69	26 Feb 97	149	30 Sep 96	365

[a] During the 2000/2001 season District 6 was open from October 1 to November 14 and December 9 to 17. Section 3-A was open from October 1 to 10 and from November 1 to 4.

[b] During the 1999/2000 season Districts 4, 5, 11, 14, and 15 were closed from March 1 through May 14.

[c] During the 1997/1998 season District 8 was open October 1 to 20 and October 26 to 29. During the 1997/1998 shrimp pot fishery, gear operation was restricted to daylight hours only, 8 a.m. to 4 p.m. Several districts were closed August 31, 1998 for re-registration and issuing of pot tags.

[d] During the 2001/2002 season, District 7 was open October 1 to November 8 and November 25 to December 10.

[e] During the 1998/1999 season District 8 closed October 19, reopened October 30 through November 2, and then reopened from November 8 through 13. During the 1998/1999 season Districts 4, 5, 11, 14, and 15 were closed from March 1 through April 30.

[f] During the 1995/1996 season, District 13 did not open October 1, 1995, but opened January 1, 1996.

Table 4.–Guideline harvest levels for the 2006/2007 Southeast Alaska commercial pot shrimp fishery by District or Section, GHLs for the 2004/2005 season, and GHLs for the 2005/2006 season compared to actual harvests.

District/Section	Guideline Harvest Level 2006/2007 (whole pounds)	Guideline Harvest Level 2005/2006 (whole pounds)	Guideline Harvest Level 2004/2005 (whole pounds)	Actual Harvest in 2005/2006 Season
1	**98,400**	164,000	164,000	160,546
2	86,000	86,000	86,000	83,052
3-A	198,000	198,000	198,000	202,186
3-B/C	50,000	50,000	50,000	56,051
4	20,000	20,000	20,000	18,579
5	20,000	20,000	20,000	19,282
6	82,000	**82,000**	68,000	81,955
7	78,000	78,000	78,000	79,927
8	20,000	20,000	20,000	21,494
9	18,000	18,000	18,000	20,252
10	48,000	48,000	48,000	53,292
11	20,000	20,000	20,000	23,317[a]
Tenakee Inlet	28,000	**28,000**	20,000	36,435
Remainder of 12	15,000	15,000	15,000	13,521
13-A/B	15,000	15,000	15,000	13,194
13-C	42,000	42,000	42,000	43,605
14	**15,000**	20,000	20,000	15,845
15	**Closed**	**15,000**	20,000	4,230[b]
16	Closed	**Closed**	15,000	N/A
Total	**853,400**	**937,000**	**1,010,000**	946,763

Note: Spot shrimp only unless otherwise noted.

[a] Spot and coonstripe shrimp combined.

[b] Coonstripe shrimp onl

Table 5.–Total number of longlined cone pots fished by district, subdistrict, and year of survey during 1996 and 1997 preseason pilot, 1998–2005 preseason, and 1999–2002 postseason surveys.

Project	*District*	*Subdistrict*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*Grand*
Preseason	103	103-21		165									165
		103-23			120	120	120	120	30			120	900
		103-25			120	120	120	120	30	120	120	120	1,140
		103-30		180									180
		103-40	150	180						120			180
	Subtotal		270 0	945	240	240	240	240	60	120	240	240	2,565
	107	107-10	50								120	120	410
		107-20	112			180	180	110	150	150	120	120	1,122
		107-30					30		30				60
		107-40	30			30	30		30	120			120
	Subtotal			0	0	210	240	110	210	270	240	240	1,712
	112	112-41	192				60			40	30	30	200
		112-42					20			20	40	30	130
		112-45					120			130	150	140	672
		112-48					60	40		60	60	40	277
	Subtotal		0	0	0	0	260	0 20 132	249	250	280	240	1,279
	113	113-55				60	80	57		70	80	60	420
		113-57				60	70	60	70	70	80	70	480
		113-58				120	110	60	100	100	110	100	700
	Subtotal		0	0	0	240	260	120 70	240	240	270	230	1,600
	Total			**945**	**240**	**690**	**1,000**	**470**	**759**	**880**	**1,030**	**950**	**7,155**
Postseason	103	103-23	**192**			120	120		120				360
		103-25				120	120	279	120				639
	Subtotal					240	240	279	240				999
	107	107-20						120	150				270
		107-30						30	30				60
		107-40						60	60				120
	Subtotal							210	240				450
	Total					**240**	**240**	**489**	**480**				**1,449**
	Grand Total			**945**	**240**	**930**	**1,240**	**1,199**	**1,239**	**880**	**1,030**	**950**	**8,604**

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Table 6.–Mean and standard error of catch rate in terms of weight and numbers per pot for spot shrimp, and soak time, and total number of pots set for small and large mesh pots in preseason pot shrimp surveys in District 3 1997–2005.

					Number/pot			Weight, kg/pot			Soak, hrs		
Project	**Mesh**	**District**	**Subdistrict**	**Year**	**Mean**	**Std Err**	**N**	**Mean**	**Std**	**N**	**Mean**	**Std Err**	**N**
Preseason	1.125	103	103-21	1997	132.2	14.70	23			23	22.8	0.27	23
			103-23	1997	135.4	20.43	19			19	21.4	0.21	19
				1998	191.0	15.57	36			36	21.4	0.75	36
				1999	249.3	23.57	32			32	19.2	0.59	32
				2000	153.3	17.73	35	3.6	0.40	35	20.0	0.34	35
				2001	119.9	22.03	60	2.5	0.46	60	19.2	0.22	60
				2002	334.5	46.95	9	7.0	1.04	9	24.8	0.22	9
				2004	161.4	18.16	59	3.0	0.33	59	20.4	0.29	59
				2005	221.9	12.73	60	4.5	0.26	60	18.9	0.47	60
			103-25	1997	125.2	10.94	25			25	21.0	0.47	25
				1998	201.9	21.52	36			36	21.2	0.20	36
				1999	231.4	24.92	35			35	24.7	0.38	35
				2000	283.7	29.06	38	7.5	0.74	38	23.5	0.71	38
				2001	165.4	23.41	59	3.6	0.59	59	22.7	0.67	59
				2002	323.1	30.33	9	8.1	0.72	9	25.8	0.53	9
				2003	238.6	21.09	36	5.7	0.38	60	25.8	0.27	60
				2004	195.4	22.03	59	4.5	0.49	59	18.6	0.29	59
				2005	207.9	12.89	58	5.3	0.34	58	20.1	0.49	58
			103-30	1997	153.4	27.00	18			18	22.9	0.56	18
			103-40	1997	205.3	24.81	20			20	23.4	0.59	20
	1.75	103	103-21	1997	88.0	12.65	20			20	22.6	0.27	20
			103-23	1997	103.4	11.17	20			20	21.5	0.21	20
				1998	111.5	12.33	36			36	21.4	0.75	36
				1999	143.9	14.13	30			30	19.1	0.58	30
				2000	91.0	12.88	36	2.6	0.38	36	20.0	0.34	36
				2001	54.3	10.53	58	1.5	0.31	58	19.3	0.23	58
				2002	199.6	26.36	9	5.9	0.82	9	24.8	0.22	9
				2004	72.6	8.45	60	1.6	0.16	60	20.3	0.29	60
				2005	83.3	6.77	59	2.2	0.18	59	18.9	0.48	59
			103-25	1997	130.1	15.88	21			21	20.6	0.55	21
				1998	159.5	17.96	35			35	21.2	0.20	35
				1999	148.3	14.92	36			36	24.7	0.37	36
				2000	222.3	18.95	38	7.0	0.64	38	23.5	0.72	38
				2001	106.7	14.38	57	3.2	0.44	57	22.5	0.68	57
				2002	236.0	26.43	9	7.5	0.79	9	25.8	0.53	9
				2003	170.8	10.98	37	5.1	0.26	60	25.8	0.27	60
				2004	127.9	13.55	58	3.7	0.39	58	18.5	0.29	58
				2005	126.0	9.00	58	3.6	0.26	58	20.0	0.50	58
			103-30	1997	140.7	40.13	11			11	23.2	0.68	11
			103-40	1997	152.7	22.34	23			23	22.7	0.54	23

Table 7.–Mean and standard error of catch rate in terms of weight and numbers per pot for spot shrimp, and soak time, and total number of pots sampled for small and large mesh pots in postseason pot shrimp surveys in District 3 1999–2002.

					Number/pot			Weight, kg/pot			Soak, hrs		
Project	Mesh	District	Subdistrict	Year	Mean	Std Err	N	Mean	Std	N	Mean	Std Err	N
Postseason	1.125	103	103-23	1999	180.6	18.05	35				19.9	0.43	35
				2000	183.5	23.47	37	3.8	0.47	37	19.0	0.33	37
				2002	256.4	30.74	9	4.6	0.63	10	22.3	0.34	10
			103-25	1999	121.8	13.02	37				22.4	0.52	37
				2000	297.4	25.96	36	7.7	0.64	36	23.8	0.62	36
				2001	125.6	16.56	60	2.7	0.37	60	23.0	0.58	60
				2002	285.6	39.80	9	5.5	0.75	9	26.5	0.24	9
	1.75	103	103-23	1999	87.1	9.93	33				19.8	0.50	33
				2000	81.6	10.97	35	2.2	0.30	35	19.0	0.35	35
				2002	87.5	20.45	9	2.1	0.44	11	22.4	0.33	11
			103-25	1999	111.2	10.16	35				22.6	0.54	35
				2000	213.6	14.93	34	6.7	0.46	34	23.7	0.63	34
				2001	86.7	10.89	60	2.5	0.32	60	22.8	0.57	60
				2002	151.3	8.53	9	3.8	0.23	9	26.5	0.24	9

Table 8.–Mean and standard error of mean carapace length (CL) by mesh size in pre- and postseason pot shrimp surveys in subdistricts of District 3, 1997–2005.

Project	Mesh	Subdistrict	Year	Carapace length, mm	
				Mean	St. Err.
Preseason	1.125	103-21	1997	34.3	0.27
		103-23	1997	31.8	0.27
			1998	34.1	0.13
			1999	34.1	0.13
			2000	34.6	0.15
			2001	31.7	0.11
			2002	31.6	0.10
			2004	31.4	0.10
			2005	30.5	0.10
		103-25	1997	38.6	0.20
			1998	36.8	0.15
			1999	37.9	0.16
			2000	37.7	0.15
			2001	34.3	0.11
			2002	33.1	0.11
			2003	34.2	0.06
			2004	33.7	0.11
			2005	33.4	0.10
		103-30	1997	33.3	0.28
		103-40	1997	34.8	0.27
	1.75	103-21	1997	37.0	0.17
		103-23	1997	37.0	0.18
			1998	37.0	0.12
			1999	36.8	0.12
			2000	36.8	0.13
			2001	34.7	0.12
			2002	34.8	0.10
			2004	35.3	0.10
			2005	34.6	0.09
		103-25	1997	40.3	0.19
			1998	39.0	0.13
			1999	40.1	0.14
			2000	38.8	0.14
			2001	36.4	0.11
			2002	36.1	0.11
			2003	35.9	0.07
			2004	36.8	0.09
			2005	34.8	0.09
		103-30	1997	37.0	0.21
		103-40	1997	37.5	0.15
Postseason	1.125	103-23	1999	32.5	0.14
			2000	32.3	0.14
			2002	30.5	0.18
		103-25	1999	36.0	0.16
			2000	34.8	0.14
			2001	33.7	0.12
			2002	31.6	0.17
	1.75	103-23	1999	36.3	0.14
			2000	34.9	0.12
			2002	33.8	0.18
		103-25	1999	38.9	0.14
			2000	37.4	0.12
			2001	36.5	0.11
			2002	34.4	0.17

Table 9.–Mean and standard error of soak time, and catch rate in terms of weight and numbers per pot for spot shrimp, and total number of pots sampled for small and large mesh pots in preseason pot shrimp surveys in District 7 1996, 1999, and 2000–2005.

					Number/pot			Weight, kg/pot			Soak, hrs		
Project	**Mesh**	**District**	**Subdistrict**	**Year**	**Mean**	**Std Err**	**N**	**Mean**	**Std**	**N**	**Mean**	**Std Err**	**N**
Preseason	1.125	107	107-10	1996	121.9	29.32	10			10	18.6	0.50	10
				2003	133.2	16.48	55	2.4	0.24	55	19.0	0.38	55
				2004	86.0	8.55	57	1.6	0.17	57	19.6	0.26	57
				2005	133.7	13.75	60	2.5	0.24	60	15.7	0.02	6
			107-20	1996	23.5	3.25	39				23.7	0.56	39
				1999	17.8	3.00	46	0.2	0.05	46	17.7	0.38	46
				2000	29.0	3.85	72	0.9	0.12	72	18.3	0.21	72
				2001	59.7	8.85	54	2.0	0.26	54	20.8	0.27	54
				2002	47.7	10.43	75	1.3	0.22	75	17.9	0.24	75
				2003	47.0	7.49	71	1.4	0.20	71	19.3	0.33	71
				2004	60.8	8.97	54	1.6	0.22	54	18.0	0.29	54
				2005	126.0	16.73	60	3.0[39]	0.36	60			
			107-30	2000	54.7	15.47	12	1.9	0.49	12	19.3	0.17	12
				2002	41.8	8.09	15	1.5	0.29	15	20.3	0.44	15
			107-40	1996	14.8	5.59	4			4	20.9	0.42	4
				1999	13.3	9.06	3			3	16.2	0.00	3
				2000	3.8	1.75	12	0.2	0.08	12	16.5	0.05	12
				2002	1.4	0.47	30	0.1	0.03	30	16.2	0.10	30
	1.75	107	107-10	1996	60.4	8.70	40				18.6	0.24	40
				2003	46.7	3.69	59	1.2	0.09	59	18.8	0.37	59
				2004	32.3	3.17	60	1.0	0.10	60	19.6	0.25	60
				2005	44.5	4.35	60	1.4	0.14	60	15.7	0.00	5
			107-20	1996	26.7	2.90	54				21.8	0.63	54
				1999	15.6	2.31	51	0.2	0.06	52	17.9	0.34	52
				2000	23.6	3.35	69	0.9	0.12	70	18.5	0.21	70
				2001	46.2	7.22	55	1.8[40]	0.27	55	20.7	0.27	55
				2002	30.2	4.36	75	1.1	0.15	75	17.9	0.24	75
				2003	33.4	5.09	73	1.1	0.16	73	19.2	0.31	73
				2004	39.6	5.86	58	1.3	0.20	58	17.9	0.27	58
				2005	77.4	13.65	60	2.1[54]	0.24	60			
			107-30	2000	42.4	9.94	12	1.6	0.36	12	19.3	0.17	12
				2002	34.4	5.95	15	1.3	0.21	15	20.3	0.44	15
			107-40	1996	27.6	11.70	15				20.9	0.15	15
			107-40	1999	8.1	5.70	7				16.4	0.08	7
				2000	8.1	5.10	13	0.3	0.22	13	16.5	0.05	13
				2002	2.3	0.64	30	0.1	0.04	30	16.2	0.10	30

Table 10.–Mean and standard error of soak time, and catch rate in terms of weight and numbers per pot for spot shrimp, and total number of pots sampled for small and large mesh pots in postseason pot shrimp surveys in District 7, 1999, 2000, 2001, and 2002.

					Number/pot			Weight, kg/pot			Soak, hrs		
Project	**Mesh**	**District**	**Subdistrict**	**Year**	**Mean**	**Std Err**	**N**	**Mean**	**Std**	**N**	**Mean**	**Std Err**	**N**
Postseason	1.125	107	107-20	2001	29.1	9.33	36	0.8	0.23	36	18.7	0.67	36
				2002	22.1	4.68	74	0.5	0.09	74	19.2	0.14	74
			107-30	2001	8.0	3.83	9	0.3	0.15	9	20.7	0.22	9
				2002	5.4	2.23	14	0.2	0.06	14	16.9	0.22	14
			107-40	2001	12.8	5.00	19	0.5	0.16	19	21.8	0.71	19
				2002	8.7	2.45	29	0.4	0.10	29	19.9	0.14	29
	1.75	107	107-20	2001	19.3	4.09	36	0.7	0.14	36	18.7	0.67	36
				2002	11.3	1.93	75	0.4	0.06	75	19.3	0.14	75
			107-30	2001	5.7	2.52	9	0.3	0.12	9	20.7	0.22	9
				2002	5.1	1.89	15	0.2	0.08	15	16.9	0.21	15
			107-40	2001	15.1	5.98	16	0.8	0.31	16	22.8	0.60	16
				2002	6.9	1.35	30	0.4	0.07	30	20.0	0.14	30

Table 11.–Preseason pot shrimp surveys in subdistricts of District 7, 1996, 1999, and 2000–2005 with mean and standard error of mean carapace length (CL) by mesh size.

Project	Mesh	Subdistrict	Year	Carapace length, mm	
				Mean	St. Err.
Preseason	1.125	107-10	1996	31.6	0.34
			2003	30.0	0.15
			2004	30.9	0.15
			2005	31.1	0.10
		107-20	1996	38.8	0.20
			1999	35.5	0.20
			2000	37.2	0.28
			2001	37.5	0.20
			2002	35.1	0.20
			2003	35.6	0.16
			2004	33.8	0.17
			2005	34.1	0.11
		107-30	2000	38.0	0.85
			2002	38.6	0.31
		107-40	1996	37.9	0.94
			1999	41.9	1.78
			2000	41.1	0.86
			2002	44.3	0.87
	1.75	107-10	1996	36.1	0.15
			2003	34.8	0.13
			2004	36.3	0.16
			2005	36.7	0.13
		107-20	1996	39.8	0.14
			1999	37.3	0.18
			2000	38.7	0.27
			2001	39.4	0.16
			2002	37.7	0.17
			2003	37.9	0.15
			2004	37.5	0.18
			2005	37.0	0.12
		107-30	2000	38.4	0.62
			2002	39.8	0.33
		107-40	1996	43.5	0.40
			1999	42.8	1.16
			2000	40.5	0.62
			2002	42.7	1.19
Postseason	1.125	107-20	2001	35.0	0.25
			2002	31.8	0.23
		107-30	2001	36.7	0.98
			2002	35.7	1.27
		107-40	2001	38.2	0.67
			2002	37.7	0.72
	1.75	107-20	2001	38.3	0.22
			2002	36.4	0.26
		107-30	2001	39.9	0.91
			2002	37.6	0.91
		107-40	2001	43.6	0.43
			2002	42.6	0.78

Table 12.–Mean and standard error of soak time, and catch rate in terms of weight and numbers per pot for spot shrimp, and total number of pots sampled for small and large mesh pots in preseason pot shrimp surveys in District 12, 2000, and 2002–2005.

					Number/pot			Weight, kg/pot			Soak, hrs		
Project	Mesh	District	Subdistrict	Year	Mean	Std Err	N	Mean	Std	N	Mean	Std Err	N
Preseason	1.125	112	112-41	2000	47.6	16.39	11	1.4	0.58	11	15.6	0.28	11
				2002	161.2	23.21	12	5.0	0.56	20	25.7	0.62	20
				2003	172.1	21.30	19	5.1	0.62	19	21.3	0.64	19
				2004	137.0	19.68	15	4.2	0.61	15	21.4	0.25	15
				2005	64.2	16.28	14	2.0	0.51	14	21.7	0.17	14
			112-42	2000	133.3	37.44	6	4.1	1.07	6	17.7	0.16	6
				2002	317.2	15.50	6	6.9	0.71	10	28.2	0.41	10
				2003	321.0	33.93	10	7.9	0.86	10	23.6	0.48	10
				2004	219.9	31.78	15	5.1	0.64	15	24.2	0.21	15
				2005	122.1	21.18	14	2.7	0.38	14	25.6	0.42	14
			112-45	2000	89.8	9.28	36	4.1	0.38	36	21.6	0.17	36
				2002	199.9	16.98	36	7.2	0.44	65	17.7	0.41	65
				2003	263.1	13.81	62	8.5	0.45	62	16.6	0.29	62
				2004	249.4	10.29	70	9.7	0.39	70	19.0	0.27	70
				2005	168.4	8.95	68	5.6	0.37	68	18.4	0.34	68
			112-48	2000	129.4	15.26	18			18	22.1	0.36	18
				2002	140.6	6.96	23	4.5	0.25	29	15.6	0.41	29
				2003	127.3	23.52	26	7.1	0.47	30	16.7	0.27	30
				2004	201.7	17.10	30	8.7	0.73	30	18.9	0.24	30
				2005	118.9	18.15	19	5.1	0.75	19	15.9	0.15	19
	1.75	112	112-41	2000	38.5	12.74	11	1.7	0.58	11	15.6	0.28	11
				2002	106.9	19.08	12	3.8	0.61	17	25.2	0.61	17
				2003	129.9	16.18	20	4.5	0.58	20	21.8	0.70	20
				2004	74.4	7.92	15	3.1	0.37	15	21.4	0.25	15
				2005	42.3	5.57	14	1.6	0.24	14	21.7	0.17	14
			112-42	2000	94.2	26.46	6	3.7	1.02	6	17.7	0.16	6
				2002	131.0	6.42	6	5.0	0.56	8	28.2	0.46	8
				2003	105.3	19.12	10	7.2	2.63	10	23.6	0.48	10
				2004	87.9	10.45	15	3.2	0.36	15	24.2	0.21	15
				2005	57.1	7.27	15	2.1	0.27	15	25.7	0.40	15
			112-45	2000	77.5	8.57	36	3.8	0.41	36	21.6	0.17	36
				2002	153.9	10.35	36	6.5	0.45	56	17.5	0.45	56
				2003	180.6	8.01	65	6.7	0.31	65	16.7	0.29	65
				2004	229.1	9.35	80	9.6	0.42	80	18.7	0.25	80
				2005	132.7	6.62	69	5.5	0.34	69	18.4	0.34	69
			112-48	2000	124.6	10.41	18			18	22.1	0.36	18
				2002	87.1	8.55	23	3.6	0.30	27	15.4	0.40	27
				2003	128.4	20.80	26	6.1	0.44	30	16.7	0.27	30
				2004	194.0	15.03	30	8.6	0.67	30	18.9	0.24	30
				2005	113.8	11.85	20	5.4	0.60	20	15.9	0.15	20

Table 13.–Preseason pot shrimp surveys subdistricts of District 12, 2000, and 2002–2005 with mean and standard error of mean carapace length (CL) by mesh size.

Mesh	Subdistrict	Year	Carapace length, mm	
			Mean	Std. Err
1.125	112-41	2000	35.4	0.42
		2002	37.4	0.31
		2003	35.6	0.21
		2004	36.0	0.33
		2005	34.9	0.37
	112-42	2000	36.2	0.47
		2002	34.2	0.41
		2003	34.3	0.34
		2004	33.1	0.29
		2005	31.2	0.29
	112-45	2000	40.9	0.19
		2002	38.8	0.17
		2003	37.4	0.12
		2004	39.0	0.12
		2005	37.0	0.18
	112-48	2000	40.8	0.26
		2002	35.2	0.30
		2003	36.8	0.16
		2004	40.2	0.14
		2005	40.4	0.33
1.75	112-41	2000	40.4	0.34
		2002	39.0	0.29
		2003	38.0	0.25
		2004	39.3	0.24
		2005	37.9	0.27
	112-42	2000	38.5	0.42
		2002	37.6	0.37
		2003	37.6	0.31
		2004	37.5	0.23
		2005	37.4	0.27
	112-45	2000	42.0	0.16
		2002	40.8	0.18
		2003	38.4	0.11
		2004	40.1	0.09
		2005	40.4	0.13
	112-48	2000	41.0	0.24
		2002	37.5	0.28
		2003	37.8	0.15
		2004	40.9	0.13
		2005	40.8	0.28

Table 14.–Mean and standard error of soak time, and catch rate in terms of weight and numbers per pot for spot shrimp, and total number of pots sampled for small and large mesh pots in preseason pot shrimp surveys in District 13, 1999–2005.

					Number/pot			Weight, kg/pot			Soak, hrs		
Project	Mesh	District	Subdistrict	Year	Mean	Std Err	N	Mean	Std	N	Mean	Std Err	N
Preseason	1.125	113	113-55	1999	19.6	3.68	24			24	18.8	0.08	24
				2000	33.3	7.42	18	1.2	0.27	18	18.6	0.28	18
				2001	72.0	13.24	29	2.7	0.34	29	22.0	0.68	29
				2002	247.8	17.76	34	6.6	0.50	34	18.9	0.46	34
				2003	214.8	25.67	35	5.8	0.72	35	17.7	0.46	35
				2004	198.6	29.57	39	5.1	0.81	40	18.9	0.42	40
				2005	161.4	17.56	29	4.1	0.37	29	20.5	0.30	29
			113-57	1999	123.8	11.56	18			18	25.3	0.28	18
				2000	66.8	22.70	13	2.5	0.76	13	19.7	0.38	13
				2001	69.3	11.99	17	1.8	0.45	17	22.2	0.83	17
				2002	50.9	14.87	36	1.5	0.40	36	19.3	0.59	36
				2003	88.9	18.69	34	2.4	0.47	35	21.9	0.32	35
				2004	54.9	9.25	36	1.6	0.26	36	19.0	0.36	36
				2005	52.9	8.47	33	1.7	0.24	33	20.9	0.47	33
			113-58	1999	110.0	14.18	36			36	28.2	2.32	36
			113-58	2000	173.9	22.27	23	6.7	0.93	23	20.7	0.30	23
				2001	104.6	12.98	33	3.8	0.47	33	22.0	0.58	33
				2002	145.4	14.11	49	4.8	0.48	49	18.0	0.36	49
				2003	226.4	15.19	49	6.4	0.47	50	17.2	0.34	50
				2004	196.3	15.81	51	6.2	0.50	51	19.1	0.39	51
				2005	183.8	12.33	49	6.0	0.43	49	19.4	0.35	49
	1.75	113	113-55	1999	10.9	2.07	21			21	18.7	0.09	21
				2000	29.8	8.08	18	1.2	0.33	19	18.5	0.29	19
				2001	43.7	8.39	27	2.3	0.33	27	22.1	0.73	27
				2002	121.4	10.87	29	4.4	0.42	29	19.0	0.48	29
				2003	128.1	15.81	35	4.4	0.56	35	17.7	0.46	35
				2004	113.9	17.73	39	3.9	0.66	39	19.0	0.43	39
				2005	95.2	10.60	29	3.2	0.35	29	20.5	0.30	29
			113-57	1999	110.5	8.71	20			20	25.2	0.28	20
				2000	61.3	12.47	15	2.3	0.46	15	19.9	0.36	15
				2001	69.7	11.81	17	2.2	0.59	17	22.2	0.83	17
				2002	43.0	13.92	28	1.3	0.40	28	19.4	0.64	28
				2003	73.9	13.12	33	2.5	0.46	33	22.0	0.32	33
				2004	65.0	7.91	39	2.2	0.30	39	19.6	0.37	39
				2005	62.7	9.66	35	2.2	0.32	35	20.8	0.48	35
			113-58	1999	85.6	9.53	35			35	30.3	2.42	35
				2000	124.1	19.81	21	5.2	0.87	21	20.7	0.33	21
				2001	90.0	10.16	33	3.4	0.44	33	22.2	0.56	33
				2002	97.3	8.96	41	3.7	0.35	41	18.1	0.40	41
				2003	156.5	10.29	49	5.6	0.39	49	17.2	0.34	49
				2004	120.6	9.49	57	4.6	0.40	57	19.0	0.35	57
				2005	149.1	9.70	49	5.7	0.40	49	19.3	0.36	49

Table 15.–Preseason pot shrimp surveys subdistricts of District 13, 1999–2005 with mean and standard error of mean carapace length (CL) by mesh size.

Mesh	Subdistrict	Year	Carapace length, mm	
			Mean	Std. Err.
1.125	113-55	1999	36.0	0.37
		2000	37.1	0.29
		2001	34.4	0.32
		2002	34.9	0.23
		2003	34.9	0.19
		2004	33.3	0.20
		2005	33.1	0.23
	113-57	1999	39.5	0.31
		2000	39.2	0.22
		2001	38.1	0.28
		2002	35.0	0.25
		2003	35.5	0.21
		2004	34.2	0.20
		2005	37.3	0.18
	113-58	1999	37.9	0.25
		2000	39.9	0.17
		2001	35.1	0.27
		2002	36.1	0.20
		2003	36.5	0.17
		2004	35.5	0.15
		2005	36.2	0.16
1.75	113-55	1999	37.6	0.31
		2000	39.7	0.19
		2001	39.7	0.22
		2002	37.9	0.20
		2003	37.3	0.17
		2004	36.4	0.21
		2005	36.2	0.21
	113-57	1999	40.5	0.28
		2000	39.1	0.16
		2001	40.2	0.22
		2002	36.0	0.24
		2003	37.7	0.18
		2004	37.6	0.18
		2005	38.6	0.15
	113-58	1999	39.3	0.19
		2000	40.9	0.15
		2001	38.6	0.19
		2002	38.8	0.16
		2003	39.1	0.14
		2004	38.3	0.10
		2005	38.7	0.12

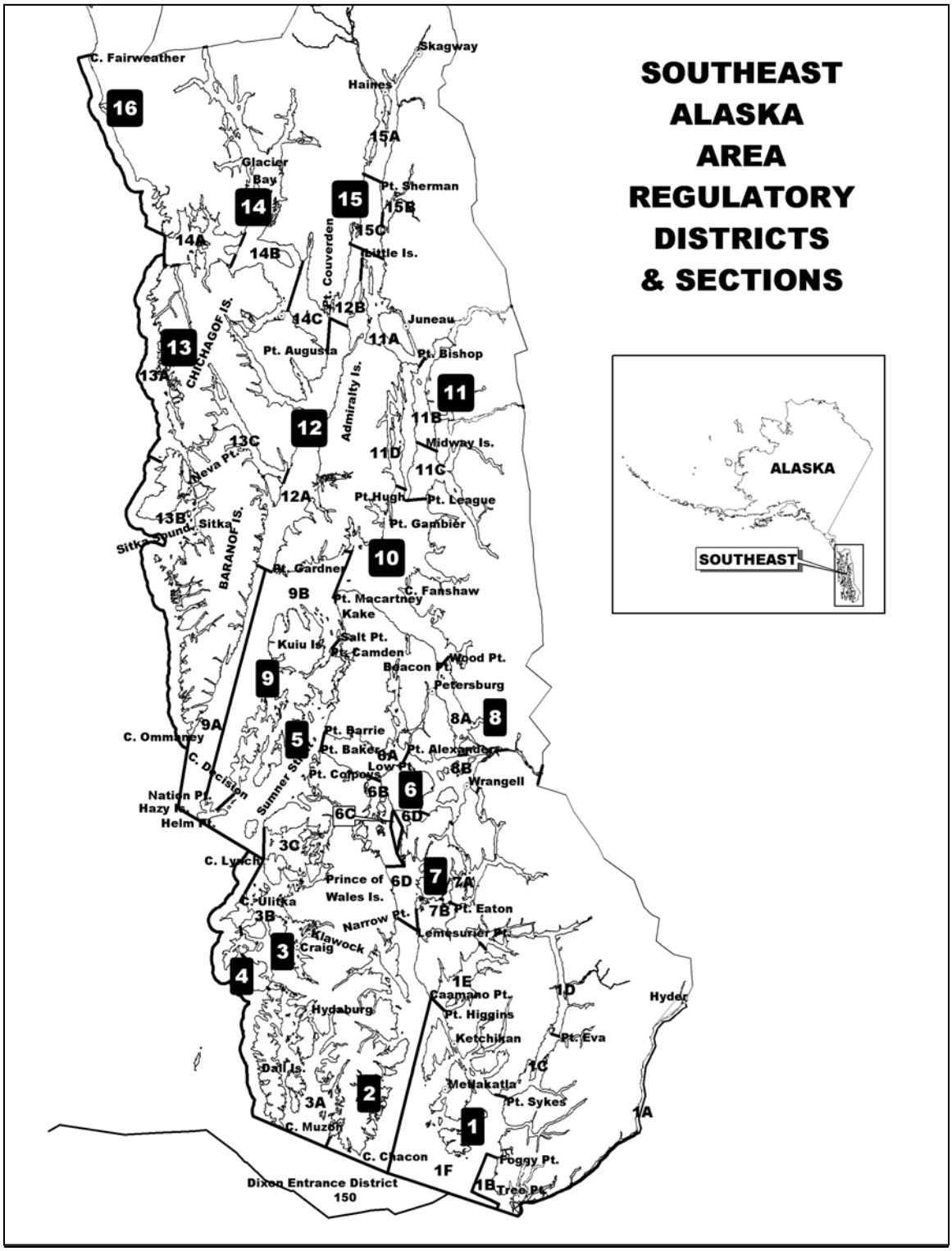


Figure 1.–Southeast Alaska commercial fishing regulatory sections.

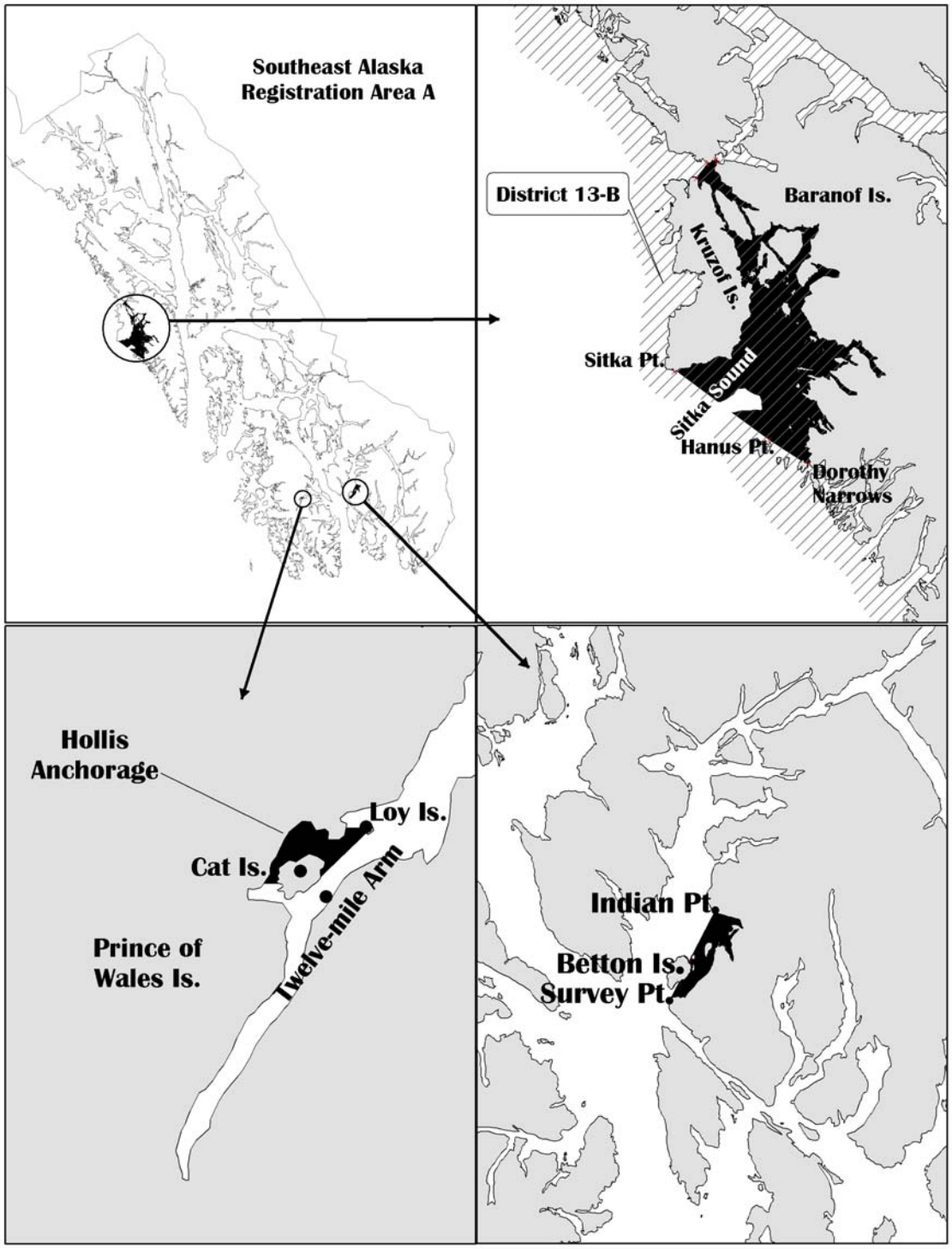


Figure 2.–Closed waters for pot shrimping in Registration Area A.

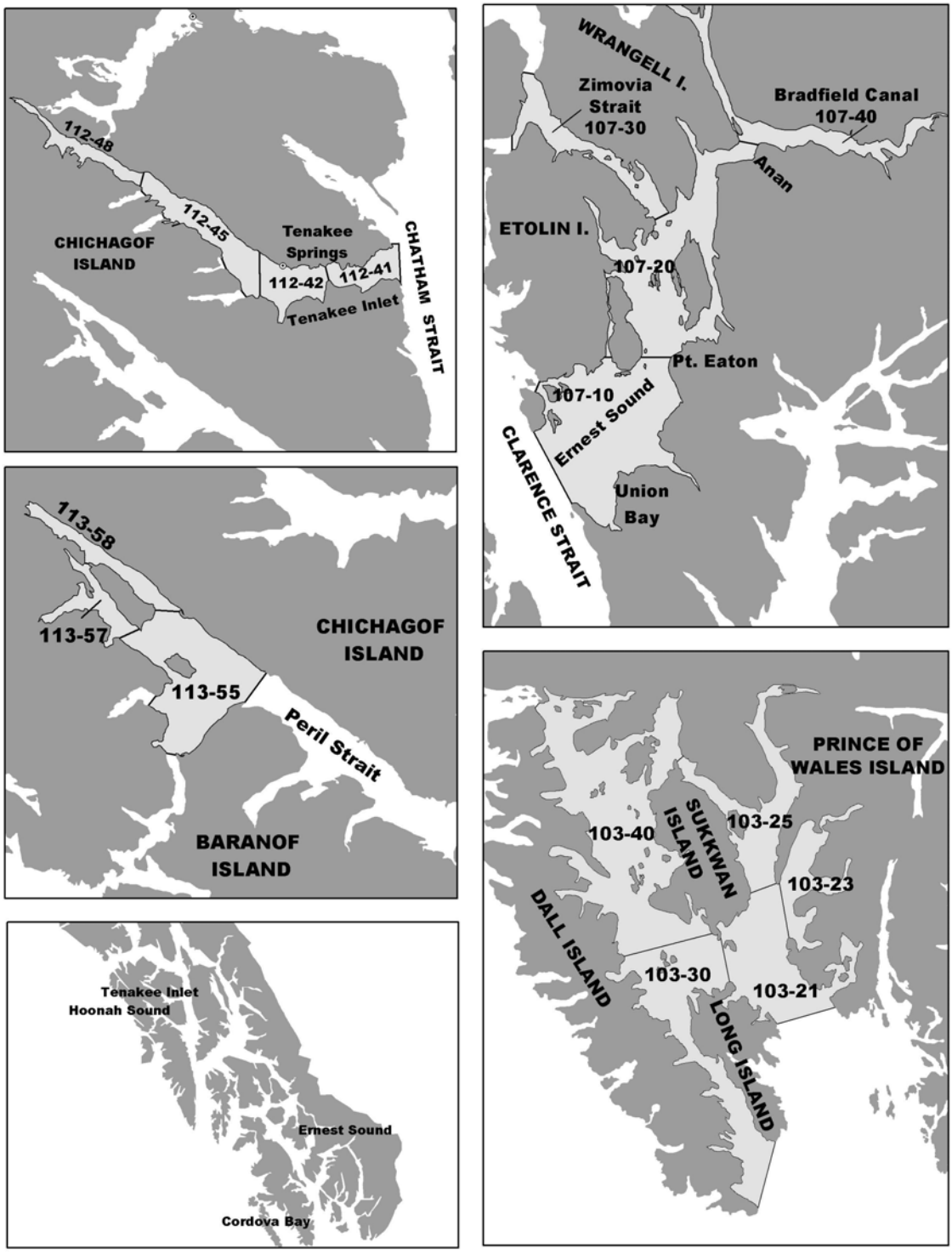


Figure 3.–Pot shrimp survey locations; Districts 3 (Cordova Bay), 7 (Ernest Sound), 12 (Tenakee Inlet) and 13 (Hoonah Sound) in Southeast Alaska.

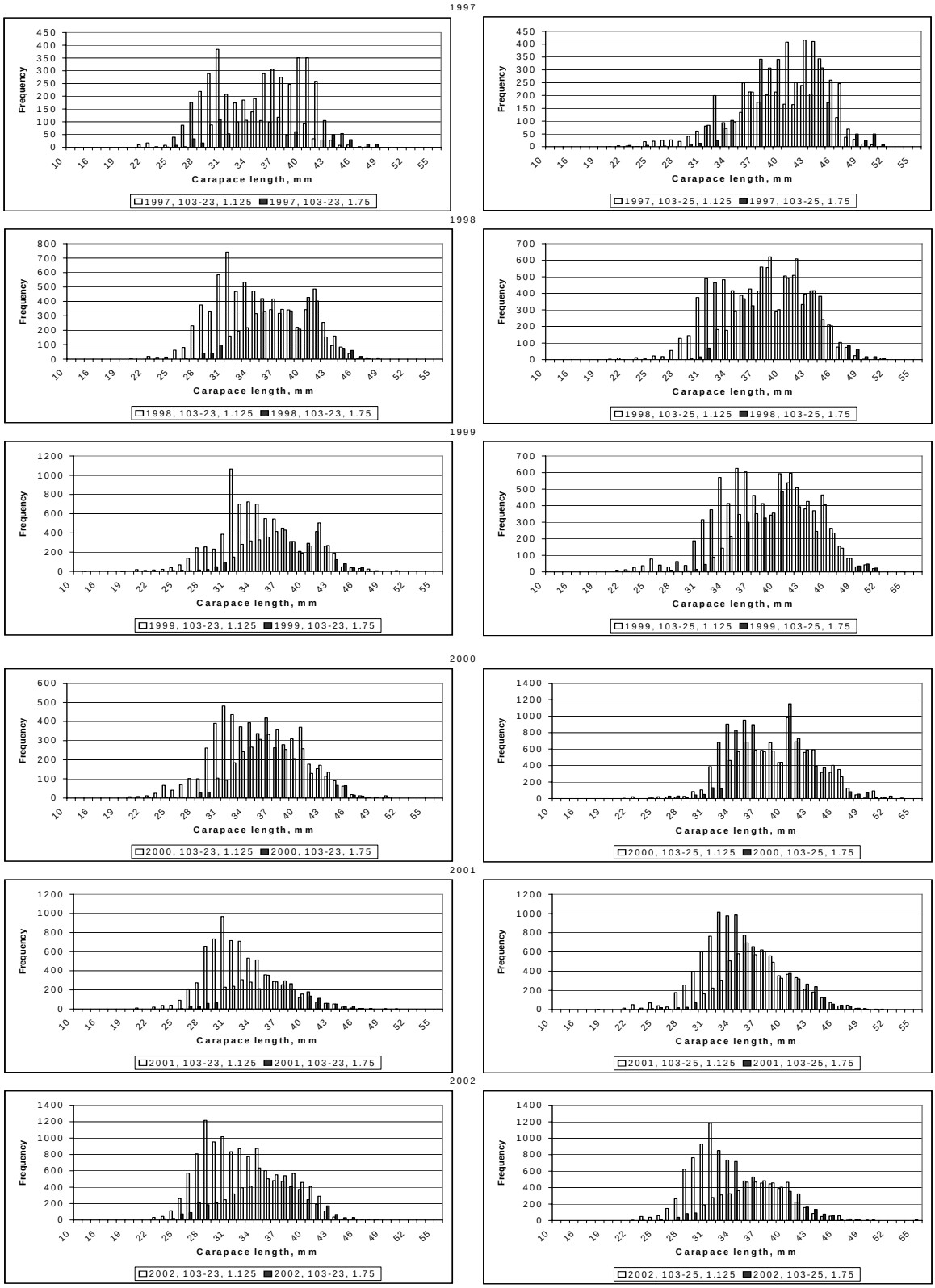


Figure 4.–Length frequency of spot shrimp in small and large mesh pots in Subdistricts 103-23 and 103-25 of District 3 during 1997–2002 preseason surveys.

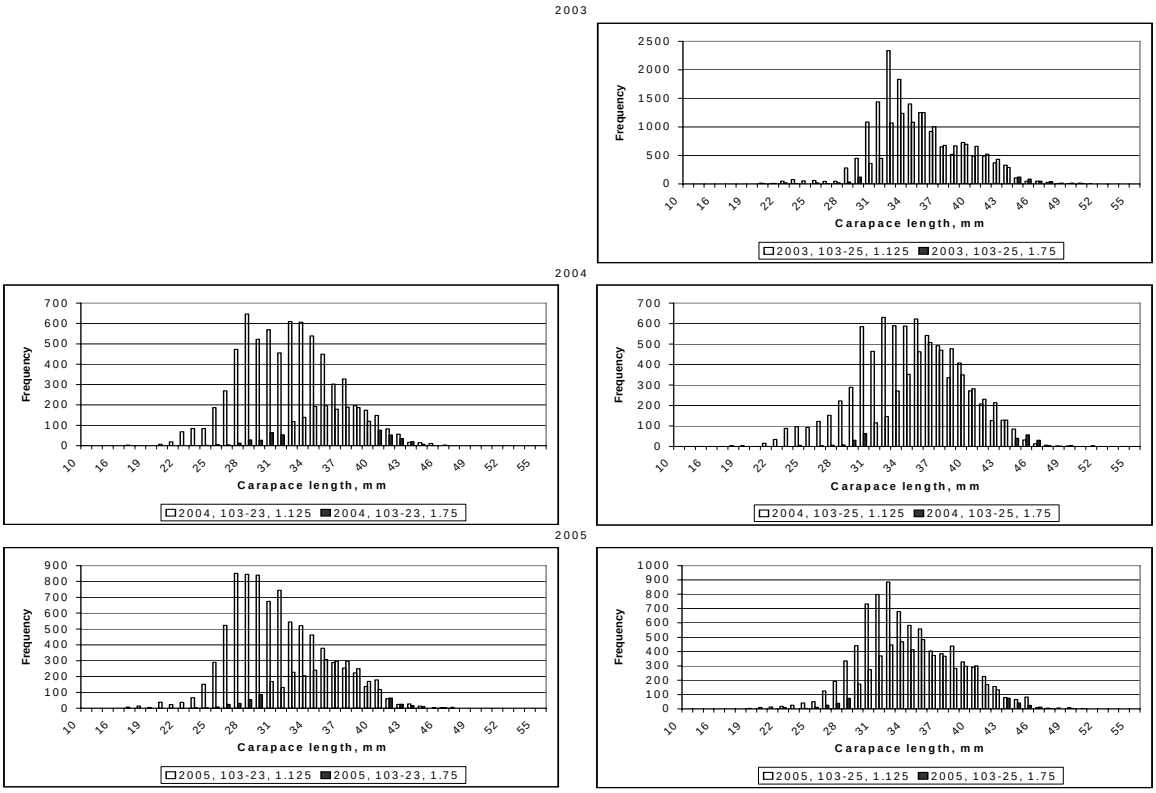


Figure 5.–Length frequency of spot shrimp in small and large mesh pots in Subdistricts 103-23 and 103-25 of District 3 during 2003–2005 preseason surveys.

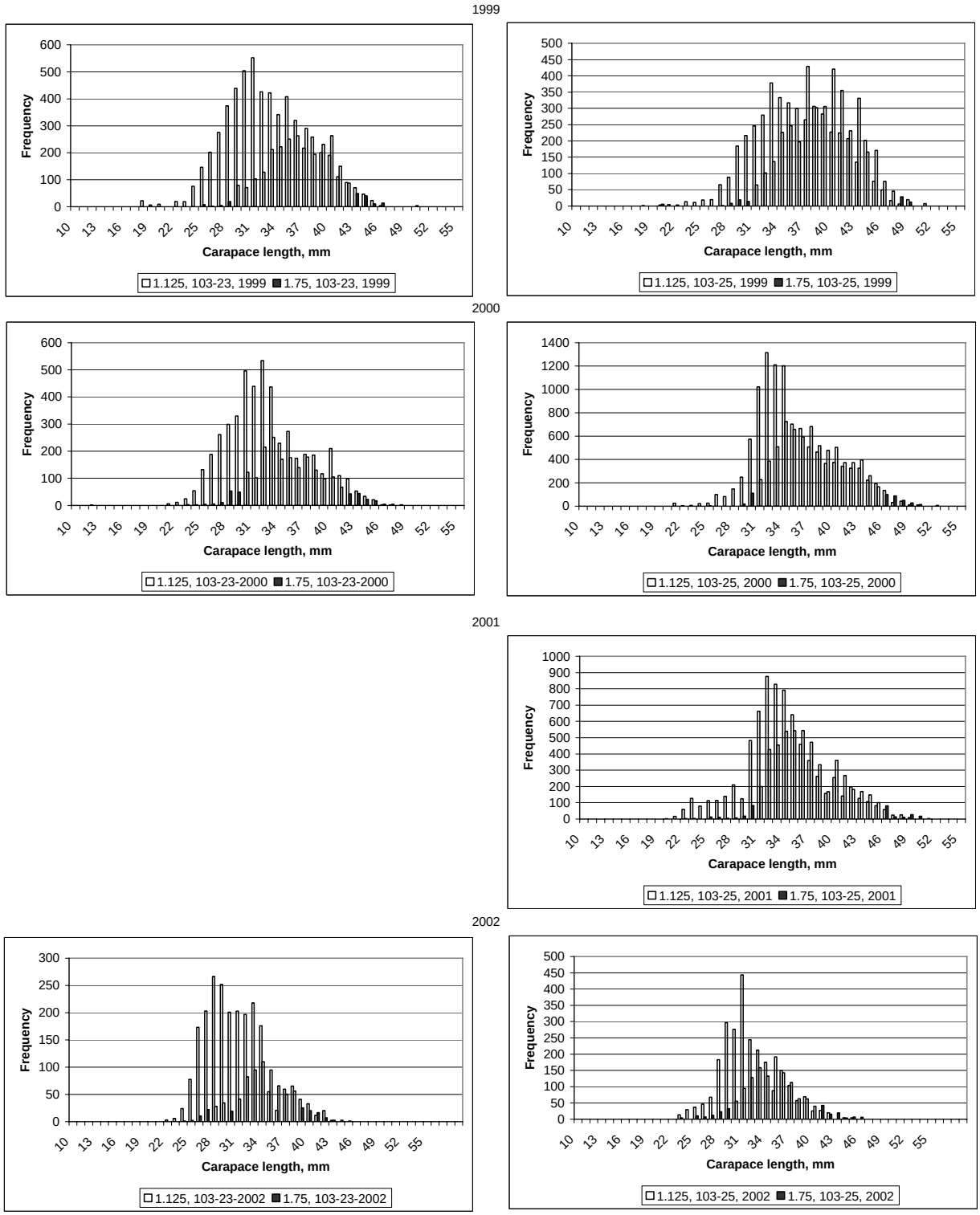


Figure 6.–Length frequency of spot shrimp in small and large mesh pots in Subdistricts 103-23 and 103-25 of District 3 during 1999–2002 postseason surveys.

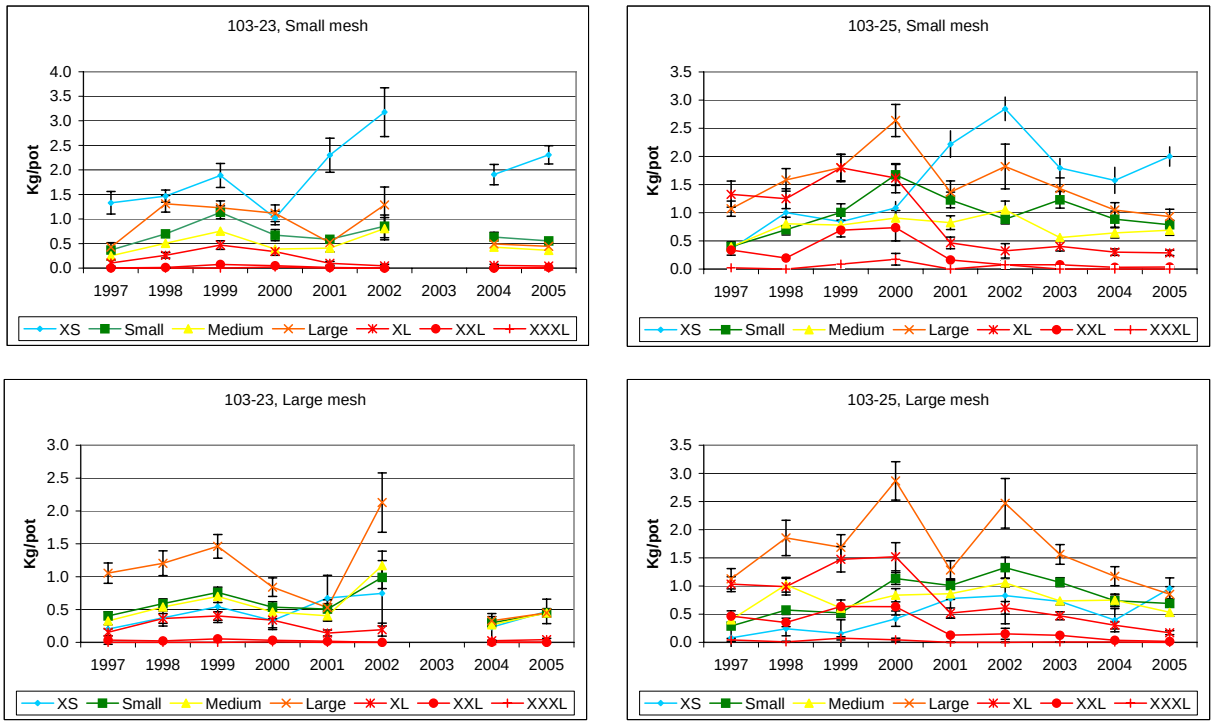


Figure 7.– Spot shrimp catch rate by size class in 42-in diameter large (1 ¾-in) and small (1 ⅛-in) mesh pots for 2 subdistricts of District 3.

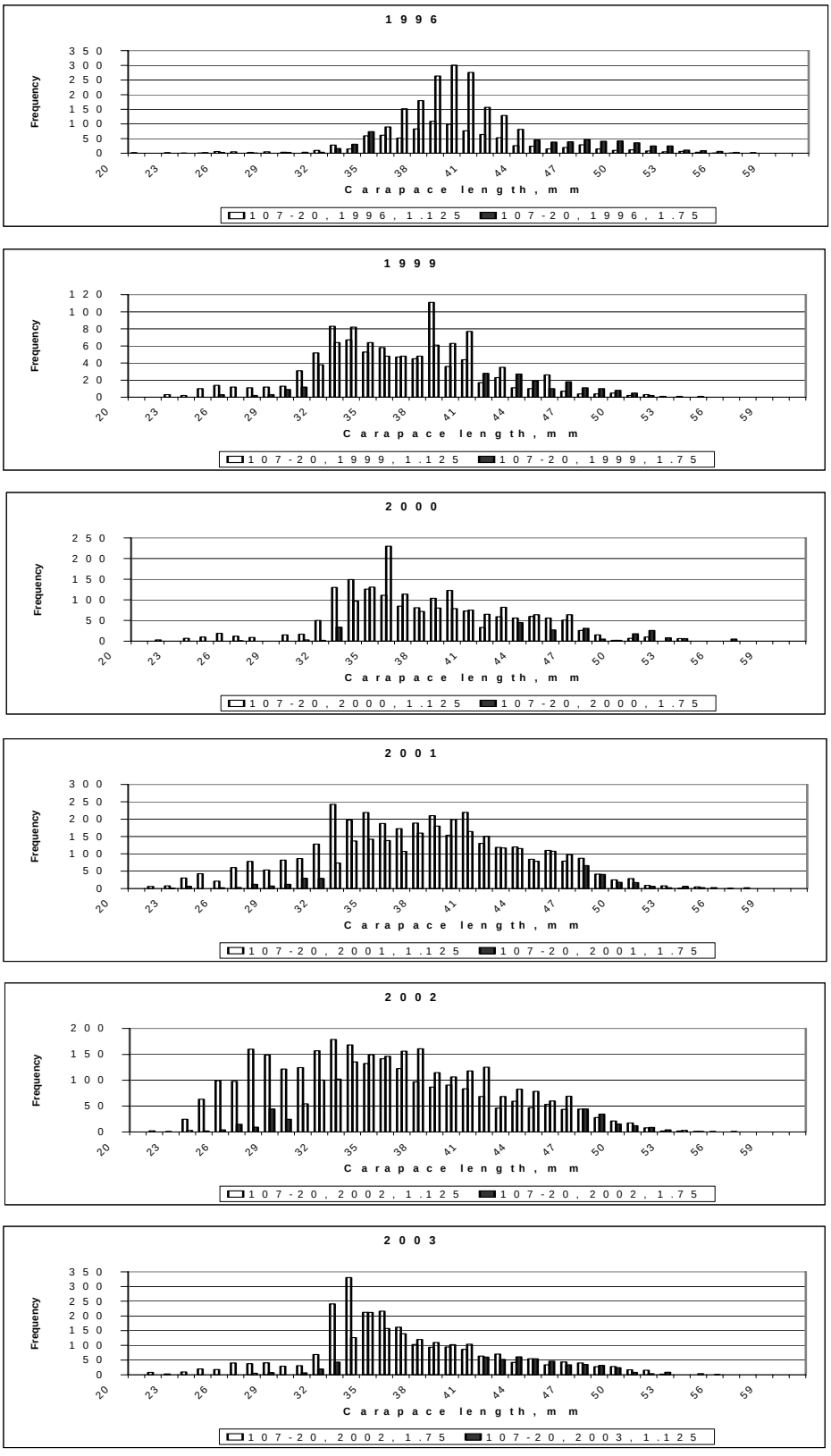


Figure 8.–Length frequency of spot shrimp in small and large mesh pots in Subdistrict 107-20 of District 7 during 1996–2003 preseason surveys.

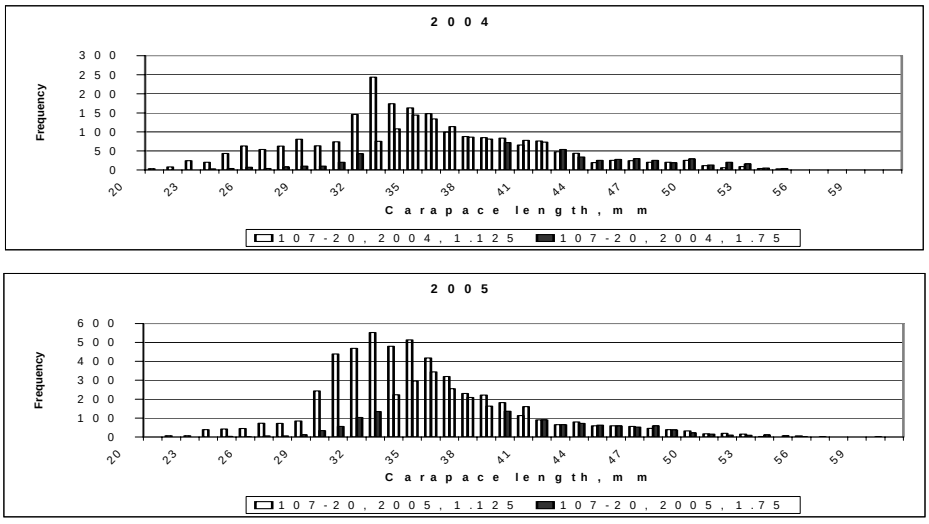
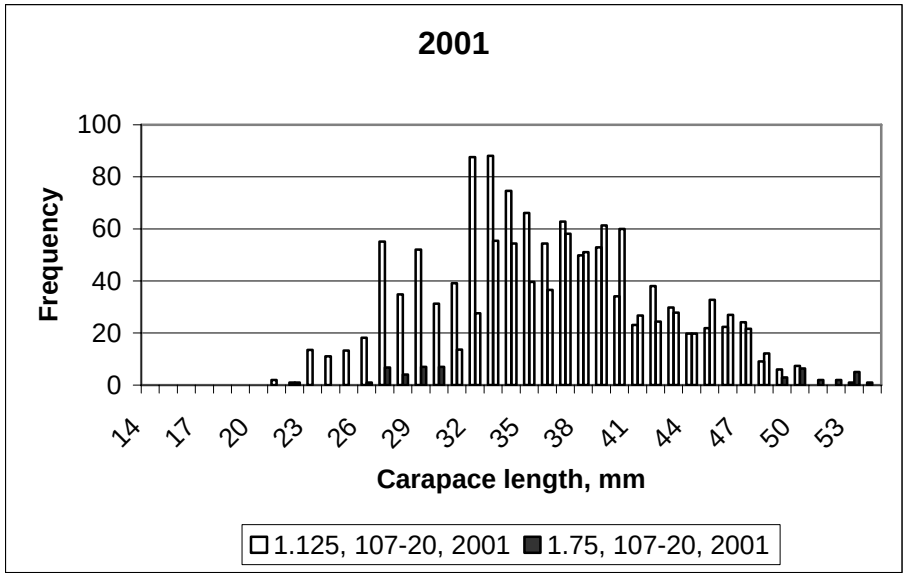


Figure 9.–Length frequency of spot shrimp in small and large mesh pots in Subdistrict 107-20 of District 7 during 2004–2005 preseason surveys.



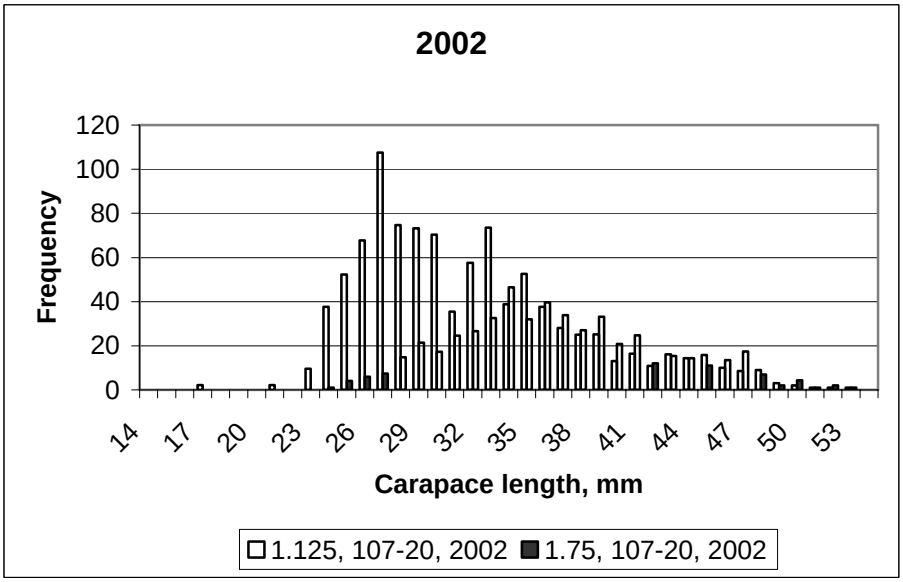


Figure 10.–Length frequency of spot shrimp in small and large mesh pots in Subdistrict 107-20 of District 7 during 2001 and 2002 postseason surveys.

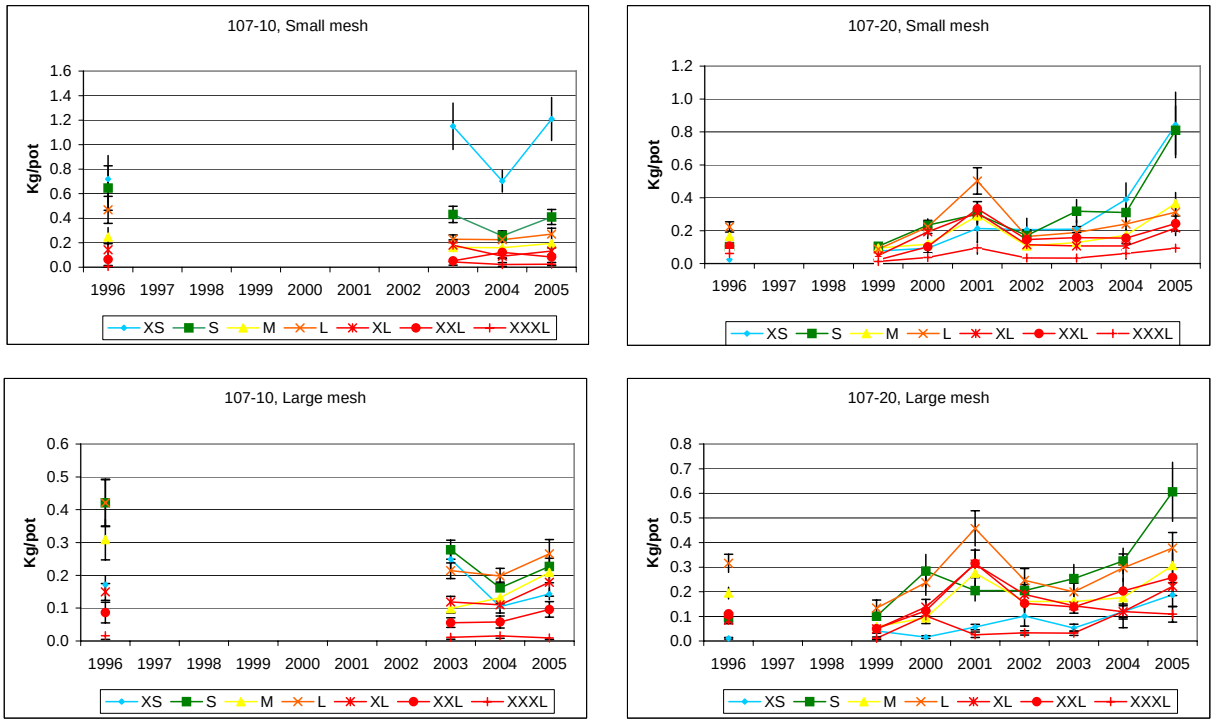


Figure 11.– Spot shrimp catch rate by size class in 42-in diameter large (1 ¾-in) and small (1 ⅛-in) mesh pots for 2 subdistricts of District 7.

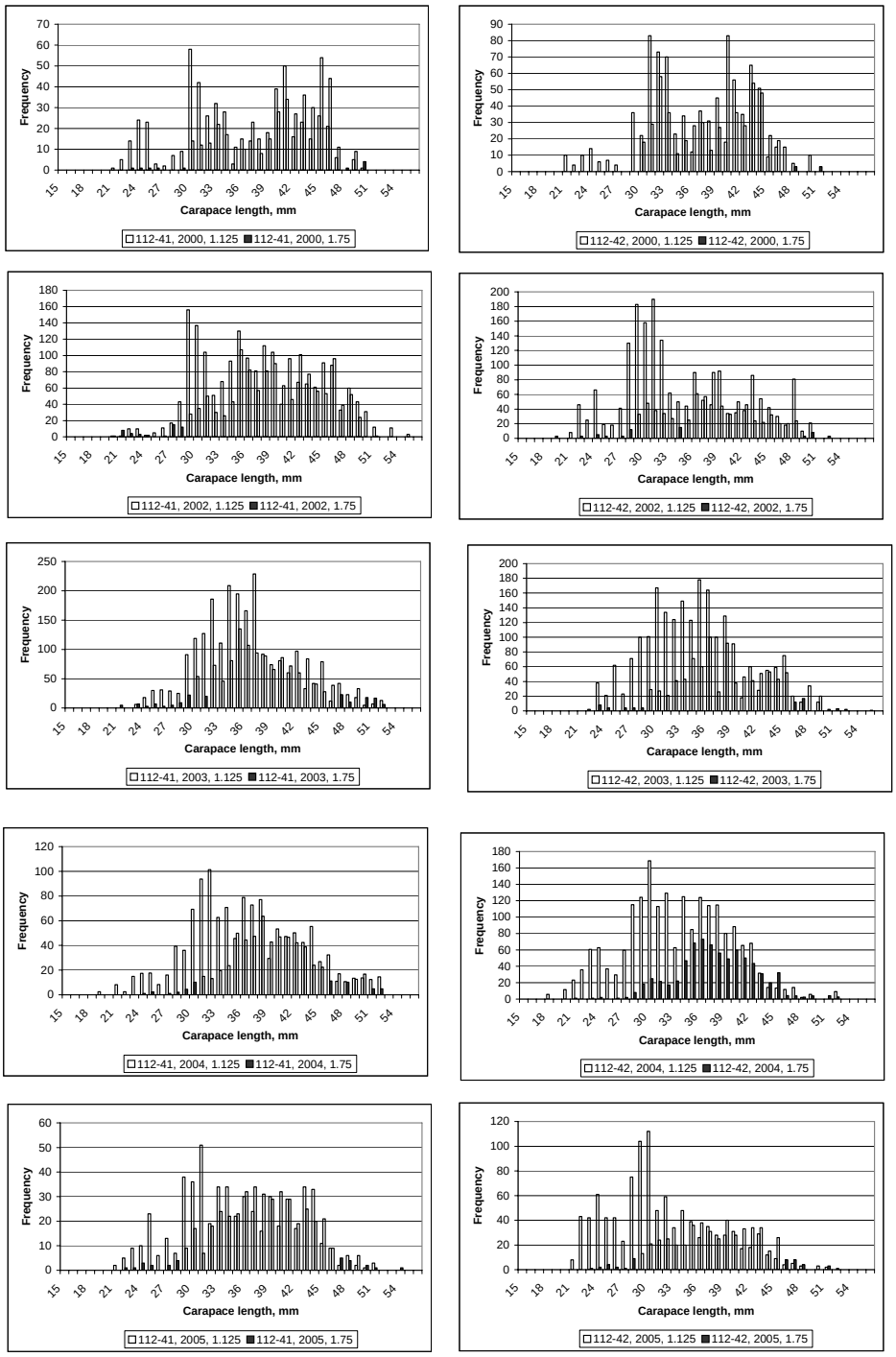


Figure 12.–Length frequency of spot shrimp in small and large mesh pots in Subdistricts 112-42 and 112-42 of District 12 during 2000–2005 preseason surveys.

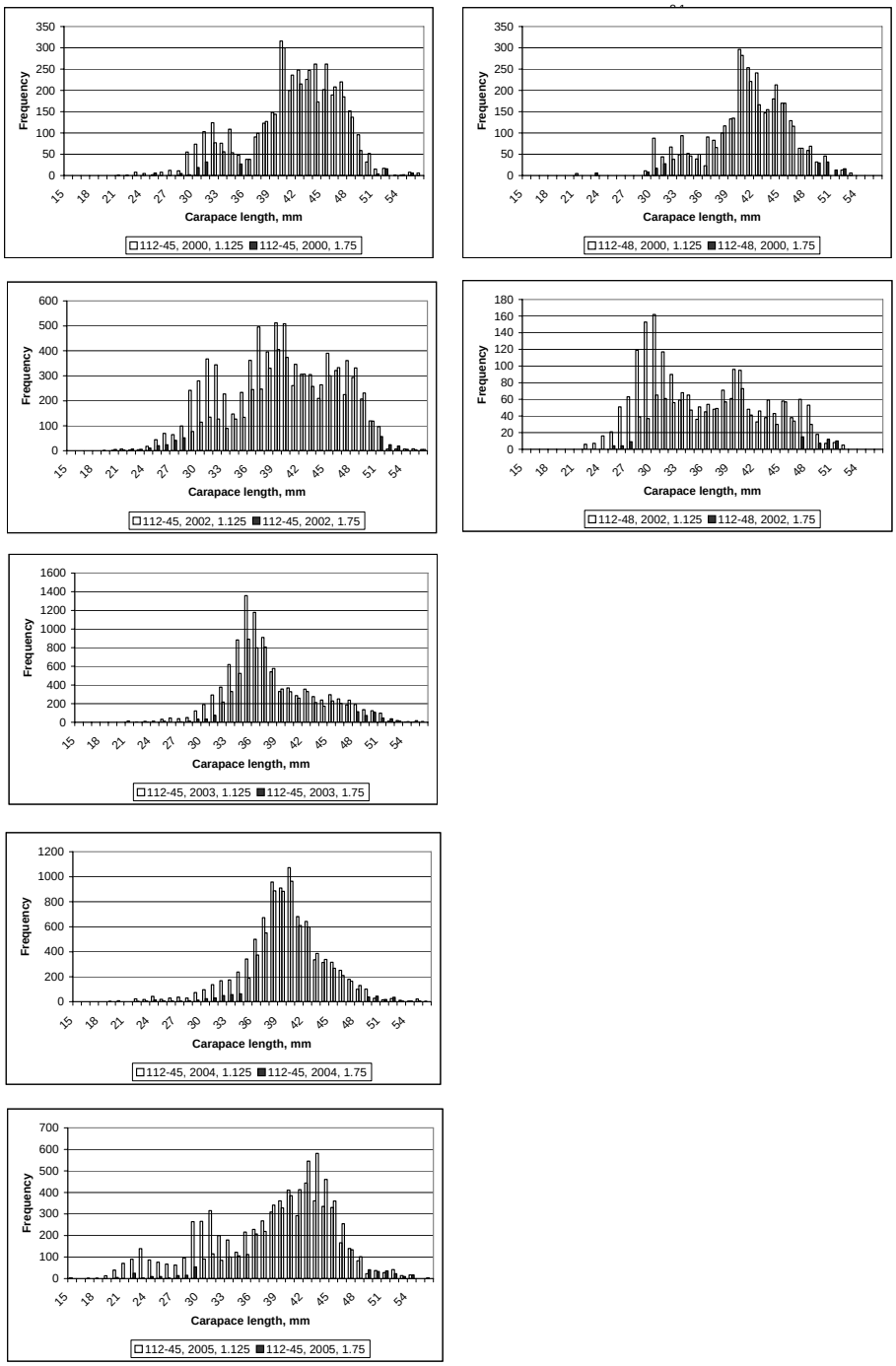


Figure 13.–Length frequency of spot shrimp in small and large mesh pots in Subdistricts 112-45 and 112-48 of District 12 during 2000–2005 preseason surveys.

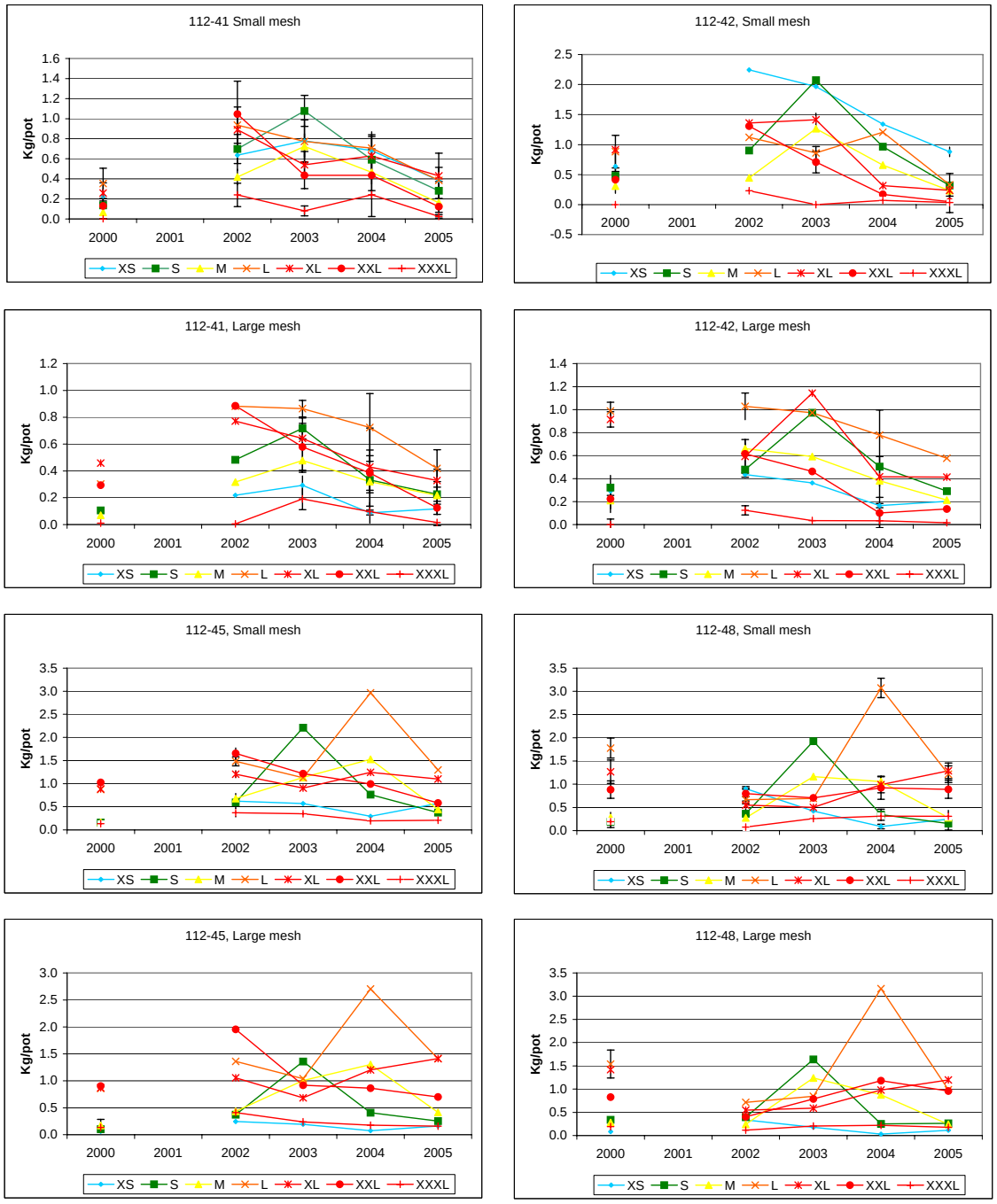


Figure 14.– Spot shrimp catch rate by size class in 42-in diameter large (1 ¾-in) and small (1 ⅛-in) mesh pots for 4 subdistricts of District 12.

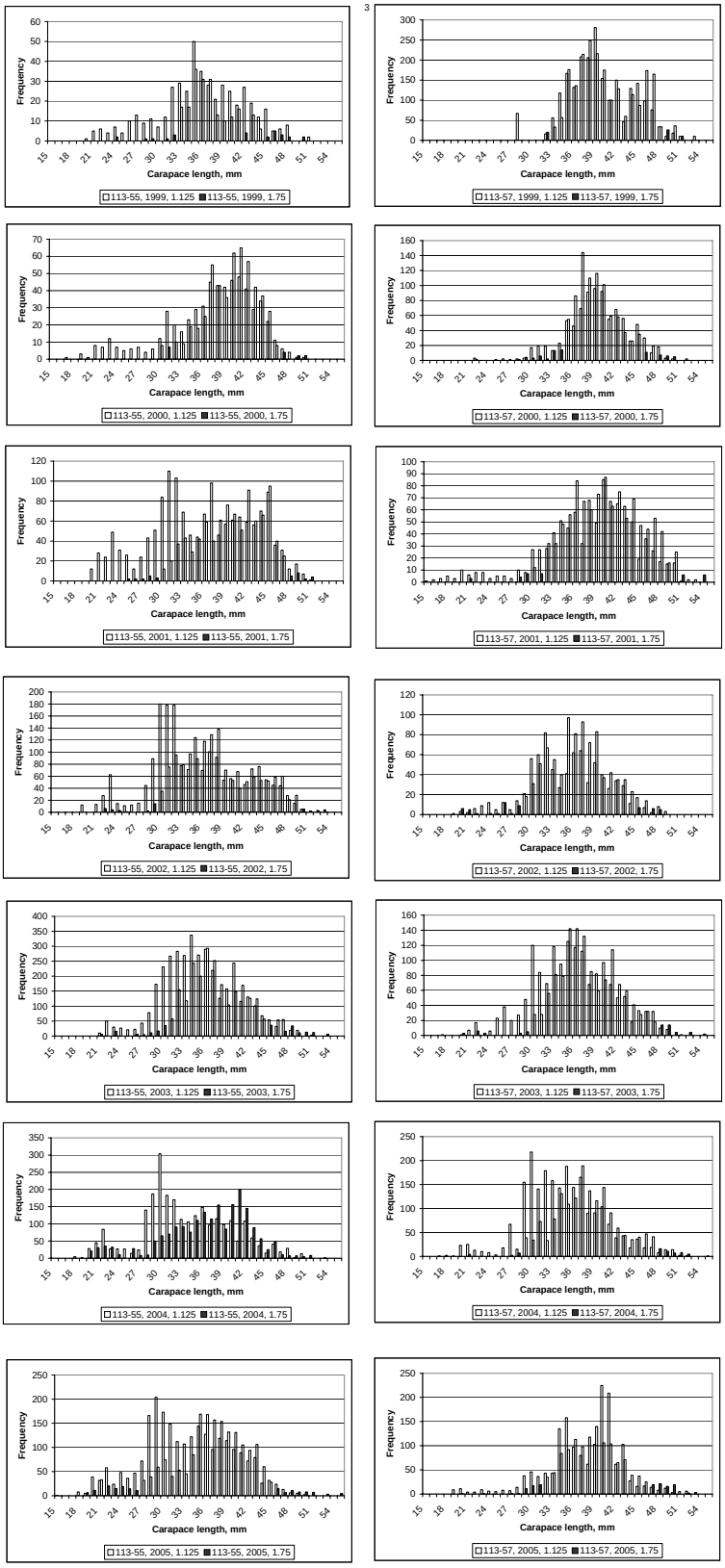
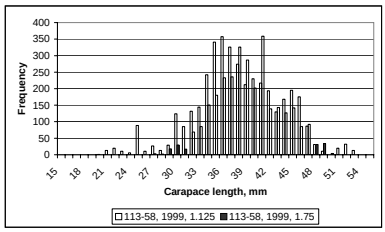
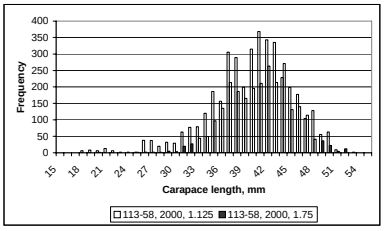
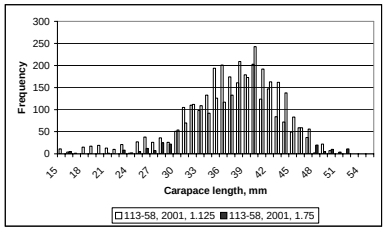
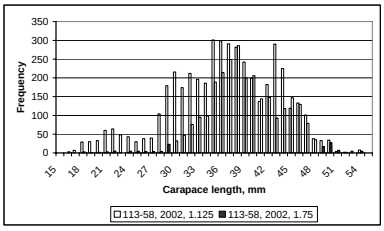


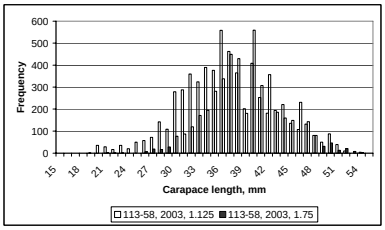
Figure 15.–Length frequency of spot shrimp in small and large mesh pots in Subdistricts 113-55 and 113-57 of District 13 during 1999–2005 preseason surveys.

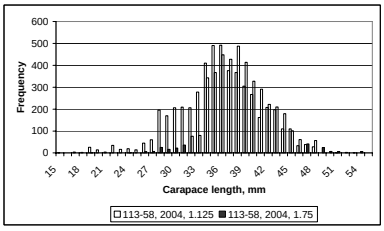












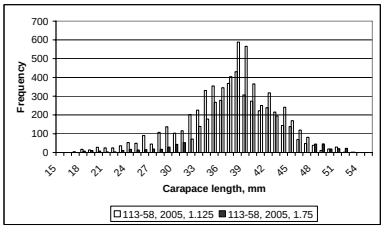
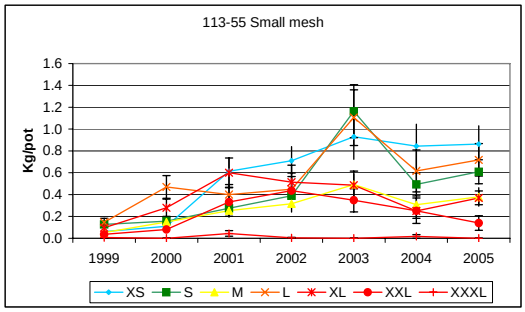
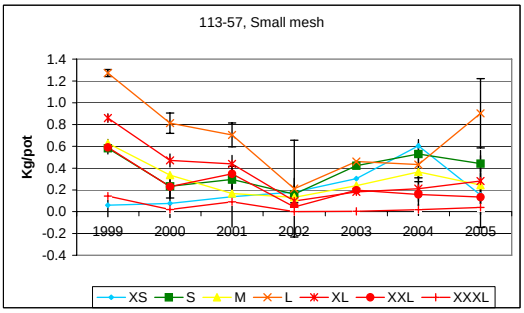
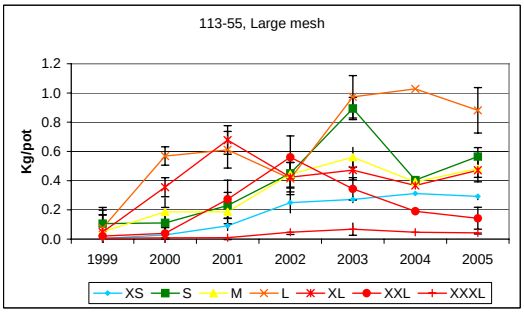
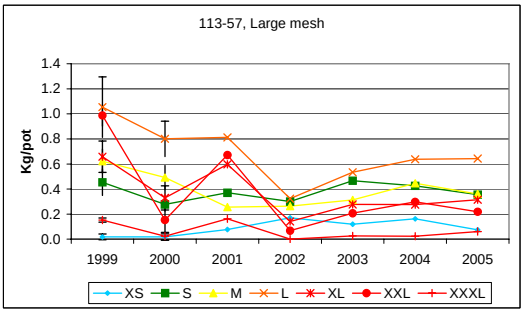


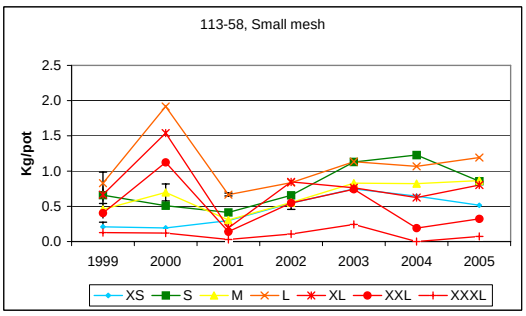
Figure 16.–Length frequency of spot shrimp in small and large mesh pots in Subdistrict 113-58 of District 13 during 1999–2005 preseason surveys.











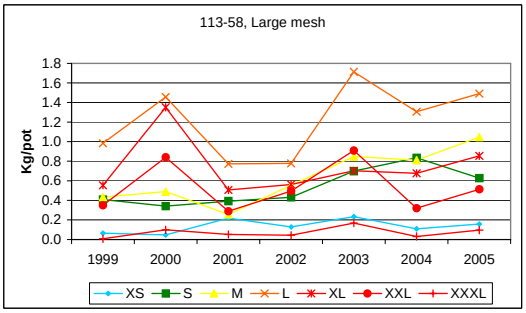


Figure 17.– Spot shrimp catch rate by size class in 42-in diameter large (1 ¾-in) and small (1 ⅛-in) mesh pots for 3 subdistricts of District 13.

APPENDICES

Appendix A. –Pot Shrimp catcher-processor weekly call-in reporting form for Southeast Alaska.

2006/2007 Pot Shrimp Reporting Form for Catcher Processors

Date: _____ **Time:** _____ **ADF&G Rep:** _____

Caller's Name: _____ **Vessel Name:** _____ **ADF&G #:** _____

Total Harvest Since Last Call In: Spots: _____ **Coons:** _____ **Date of Last Delivery:** _____

Are you planning on fishing in a different district by next week?: Y / N If YES, which district? _____

What are the names of other vessels that you are aware of that have either quit for the season or left the district? _____

_____ **Comments:** _____

Fish Ticket #	Date of Landing	District	Sub-District	# of pot lifts	Spot Tail Wt.	Spot Whole Wt.	Coon Tail Wt.	Coon Whole Wt.	Comments

Appendix B. –September 2, 2006 letter to Region Pot Shrimp Catcher-Processors and Direct Marketers, notifying of changes to shrimp fish tickets, and size categories.

STATE OF ALASKA

DEPARTMENT OF FISH & GAME

SOUTHEAST REGIONAL OFFICE

FRANK H. MURKOWSKI, GOVERNOR

COMMERCIAL FISHERIES DIVISION
802 3rd STREET
P.O. BOX 240020
DOUGLAS, ALASKA 99824-0020
PHONE: (907) 465-4250
FAX: (907) 465-4944

September 2, 2006

To Southeast Region Pot Shrimp Catcher-Processors and Direct Marketers,

The purpose of this letter is to invite you to participate in the second season of the voluntary pot shrimp logbook program to help the department gather spot shrimp size data. ADF&G's sampling program provides biological information on about half of the districts in which shrimp are now harvested. Additional information from fishermen provides valuable insight into the condition of the shrimp resource, especially in areas for which there are no sampling data.

On January 24, 2005 at the Pot Shrimp Task Force meeting in Ketchikan, ADF&G made a commitment to collect spot shrimp size data so that it can be analyzed by fishing area, management area, district, time (such as catch date or statistical week), and to avoid additional in-season reporting by fishermen. In order to meet these requirements, the department:

- Produced a Voluntary Pot Shrimp Logbook Registration Form that participants fill out at registration for the fishery to provide size category, size in grams, and number of shrimp per box information used to decode fish ticket data.
- Requested participants to continue to record size breakdowns by box or pounds on fish tickets.
- Created database tables for registration information and boxes and pounds information by size category.
- Wrote programs to merge fish ticket data with registration information and to standardize fishermen's size categories, average weights, and average number per box into ADF&G size classes.

Last year 30% of all pot shrimp catcher/processors participated in the pilot program. The department processed 512 fish tickets with size data for whole spot shrimp and was able to provide the following information at the 2006 Pot Shrimp Task Force meeting in Ketchikan:

- Graphs of size class data by pounds per pot and statistical week for fishing areas 1, 3-A, 6 & 7.
- Graphs of size composition of commercial harvest versus survey data for fishing areas 3A and 7.
- Data for fishing areas 2, 3-B/C, 4, 5, 8, 9, 10, 11, Tenakee, 12, 13-A/B, 13-C, 14 and 15 are confidential due to fewer than three participants in the logbook program per area.

Please participate in the voluntary log book program this season! To do so, fill out the enclosed form that includes vessel name, vessel ADF&G number, CFEC permit number, name, phone number, pot size (large or small), mesh size, and whether or not a specific size range of spot shrimp will be targeted this season. You also need to provide information on your market's size categories, including the minimum and maximum size in grams and minimum and maximum counts per category. You can bring this form with you or fill it out when you come to your ADF&G office to register for the fishery.

The information provided at registration will be used to interpret the data on your fish tickets, which should be given in pounds or one kilogram boxes by size category. It is important to clearly identify your size category information as pounds or boxes (see enclosed sample fish tickets). Remember that the entire harvest by species must always be reported in pounds on each ticket. The registration information will be used to convert the fish ticket data into numbers of spot shrimp in various size classes.

Your voluntary efforts will help ADF&G to better determine the health of spot shrimp stocks and whether or not changes to guideline harvest levels are appropriate to best manage the spot shrimp resource.

Sincerely,

Bill Davidson, Regional Management Coordinator
Commercial Fisheries, Region I

Enclosures: Voluntary Pot Shrimp Logbook Registration form and sample, fish ticket examples (2)

11-K80LH

printed on recycled paper

Appendix C. –Sample ADF&G Voluntary Pot Shrimp Logbook Registration Form (Blank).

Voluntary Pot Shrimp Logbook Registration Form

Year	2005				
Season	05-06				
Species	965				
Vessel Name & ADFG No.					
CFEC Permit Number					
Permit Holder's name					
Permit Holder's phone number					
Number of Pots					
Pot Size (large or small)					
Mesh Size					
Target Specific Size Range (e.g. medium)					
Size Information					
		Size / Grams.		Number	
Whole or Tails	Category	Min.	Max.	Min.	Max.

Appendix D. –Sample ADF&G Voluntary Pot Shrimp Logbook Registration Form (Completed).

Sample

Voluntary Shrimp Logbook Registration Form

Year		2006			
Season		06-07			
Species		965			
Vessel Name & ADFG No.		Dog Gone It 12345			
CFEC Permit Number		P91A000007			
Permit Holder's Name		John Doe			
Permit Holder's phone no.		586-0000			
Number of Pots		140			
Pot Size (large or small)		small			
Mesh Size		1.25 inch			
Target Specific Size Range (e.g. medium)		XL			
		Size Information per 1 kg. Box			
		Grams		**Number**	
Whole or Tails	Category	Min.	Max.	Min.	Max.
Whole	SJ	70		14	
	J	50	70	15	19
	XL	40	50	20	24
	L	35	40	25	30
	M	25	35	31	40
Tails / pound	U 15				
	16-20				
	21-30				
	31-40				

Appendix E. –Sample ADF&G Shrimp Ticket filled out with Boxes.

Example with boxes

PLACE WRAPAROUND COVER UNDER GOLDENROD COPY
WHITE – PURCHASER YELLOW – FISH & GAME PINK – SELLER GOLDENROD – PURCHASER

PURCHASER

ALASKA DEPARTMENT OF FISH & GAME
SHRIMP TICKET

DO NOT WRITE IN THIS SPACE

Vessel Name: Dog Gone It
Fishery Name: John Doe
Permit Number: P91A000007

ADF&G NO.: 12345

DO NOT WRITE IN THIS SPACE: S05

Date Fishing Began (Gear in water): 10/2/06

Number of pot lifts: 140

Port of Landing or off-shore operations type: Ket

Type of Gear used:

Proc. Code: F0006
Company: Dog Gone Sfds

10/4/06 ◀ Date Landed
2 ◀ Days Fished (Gear in Water)

PARTIAL DELIVERY
Ticket No.:
Processor:

SPECIES	CODE	STAT AREA	EFFORT	POUNDS	DELIV CODE	PRICE	AMOUNT
Northern (Pink) Shrimp	961						
(deadloss)	961				79		
Sidestriped Shrimp	962						
(deadloss)	961				79		
Coonstriped Shrimp	964						
(deadloss)	961				79		

SPECIES	CODE	STAT AREA	EFFORT	POUNDS	DELIV CODE	PRICE	AMOUNT
Spot Shrimp	965	101-44		222.2	01		
			Boxes				
		SJ	27		01		
		J	23		|		
		XL	16		|		
		L	18		|		
		M	7		|		
~~(deadloss)~~	~~965~~				~~78~~		
~~Humpy Shrimp~~	~~963~~	415		20	78		
		16-20		3	|		
		21-30		12	|		
		31-40		5	|		
				40			
(deadloss)	963				79		
Octopus	870						
Discards/Personal Use/Not Sold: Species, Disposition and Pounds							

DELIVERY CODES	
Whole Animal – 01	Deadloss – 79
Tails – 78	Discard at Sea – 98
Personal Use – 95	Discard on Shore – 99

UNITS OF EFFORT	
Drag/Dredge	– No. tows
Pot	– No. pot lifts

ADF&G USE
Interview
Observer
Logbook

Appendix F.–Sample ADF&G Shrimp Ticket filled out with Pounds.

Example with Pounds

PLACE WRAPAROUND COVER UNDER GOLDENROD COPY
WHITE – PURCHASER YELLOW – FISH & GAME PINK – SELLER GOLDENROD – PURCHASER

PURCHASER

ALASKA DEPARTMENT OF FISH & GAME
SHRIMP TICKET

DO NOT WRITE IN THIS SPACE

Vessel Name: Dog Gone It
Fishery
Name: John Doe
Permit Number: PaIA000007

ADF&G NO.: 12345
Date Fishing Began (Gear in water): 10/2/06

DO NOT WRITE IN THIS SPACE
Number of pot lifts: 140

S05
Port of Landing or off-shore operations type: Ket
Type of Gear used

Proc. Code: F0000
Company: Dog Gone Sfds.

10/5/06 ◀ Date Landed
2 ◀ Days Fished (Gear in Water)

PARTIAL DELIVERY
Ticket No.
Processor

SPECIES	CODE	STAT AREA	EFFORT	POUNDS	DELIV CODE	PRICE	AMOUNT
Northern (Pink) Shrimp	961						
(deadloss)	961				79		
Sidestriped Shrimp	962						
(deadloss)	961				79		
Coonstriped Shrimp	964						
(deadloss)	961				79		

SPECIES	CODE	STAT AREA	EFFORT	POUNDS	DELIV CODE	PRICE	AMOUNT
Spot Shrimp	965	101-44		222.2	01		
		SJ		81.4	01		
		J		50.6	|		
		XL		35.2	|		
		L		39.6	|		
		M		15.4	|		
~~(deadloss)~~	~~965~~	U15		20	~~78~~		
~~Humpy Shrimp~~	~~963~~	16-20		3	|		
		21-30		12	|		
		31-40		5	|		
				40	78		
(deadloss)	963				79		
Octopus	870						
Discards/Personal Use/Not Sold Species Disposition and Pounds							

DELIVERY CODES	
Whole Animal – 01	Deadloss – 79
Tails – 78	Discard at Sea – 98
Personal Use – 95	Discard on Shore – 99

UNITS OF EFFORT	
Drag/Dredge	– No. tows
Pot	– No. pot lifts

ADF&G USE
Interview
Observer
Logbook